



COMPANY PROFILE

REEFACS.AE

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ABOUT RACS

➤ Introduction

REEF ADVANCED COOLING SERVICES

Reef ACS is a leading engineering and energy solutions provider delivering high-performance, sustainable cooling and building optimization services across the GCC. With deep regional expertise, we provide end-to-end solutions to complex climate challenges and are pioneers of the world's first balcony and garden cooling system, redefining outdoor comfort in extreme environments.

Driven by the principles of People, Planet, and Profit, Reef ACS offers a comprehensive portfolio including Outdoor Cooling Design & Build, Energy Efficiency Retrofits, delta-T Optimization, MEP Design, District Cooling, Cooling-as-a-Service (CaaS), CFD, Energy Modeling, and Sustainability Consulting. Supported by a highly certified multidisciplinary team, we deliver lifecycle solutions from feasibility and simulation to execution and continuous optimization, creating long-term value for clients across commercial, critical, and large-scale developments.

➤ Vision

To redefine how people experience cooling in extreme climates by pioneering intelligent, sustainable, and integrated solutions.

Reef ACS envisions a future where every building, district, and outdoor space operates as a connected, high-performance environment—bridging design, construction, and operations to deliver unmatched comfort, efficiency, and environmental responsibility.

➤ Mission

Our mission is to safely deliver world-class engineering and energy solutions across the full lifecycle of cooling and building systems.

Through integrated design, advanced technologies, and operational excellence, we provide innovative outdoor cooling, district cooling, cooling-as-a-service, and energy management services.

Guided by our commitment to People, Planet, and Profit, we strive to protect the environment, empower communities, and create sustainable long-term value for our clients.

➤ Values

We are proud to be a company that is driven by vision and fuelled by our passion.

The core of our success are our people, and in recognition of their contribution, we restructured our corporate Values, to reflect our reinforced commitment to them. The three values at the heart of our business are:

Innovation

We encourage innovation to cultivate originality and pursue new ideas and technologies, while introducing the right processes and models to put them to work safely, quickly and efficiently, in order to continuously improve the standards and the diversity of our services for the common benefit of all stakeholders.

People

We recognize that our people are the heart of our organization. We strive to provide an environment that attracts, motivates, and develops individuals, and while encouraging cooperative efforts at every level and across all activities in the company.

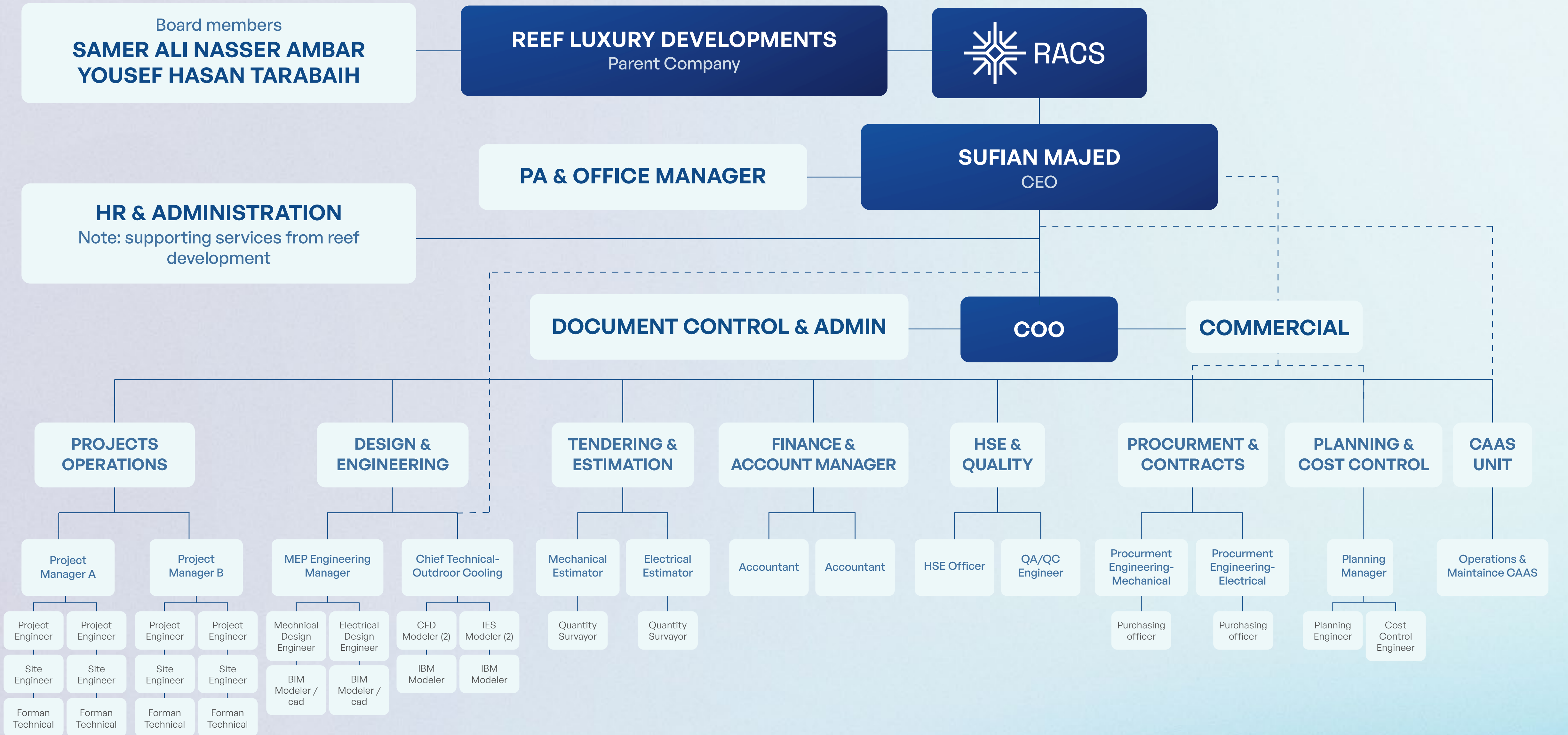
We create and implement a succession/ career progression planning Program that clearly articulates corporate expectations while charting a course for employee development.

Passion

We believe that great success requires heart and dedication. We embrace and foster passion in every aspect of our business from innovation and learning, to management and client satisfaction, to employee and skills development.



COMPANY ORGANIZATION CHART





CEO MESSAGE



Dear Valued Stakeholders,

At REEF ADVANCED COOLING SERVICES (RACS), our mission is to redefine outdoor comfort through innovation, sustainability, and excellence.

By integrating design, engineering, and execution under one roof, we deliver tailored, cost-effective solutions that meet the evolving needs of our clients. As we grow, we remain committed to creating value for our customers, employees, and communities while driving sustainable practices and technological advancements.

Together, we are shaping a future where comfort and efficiency go hand in hand. Thank you for your trust and support.

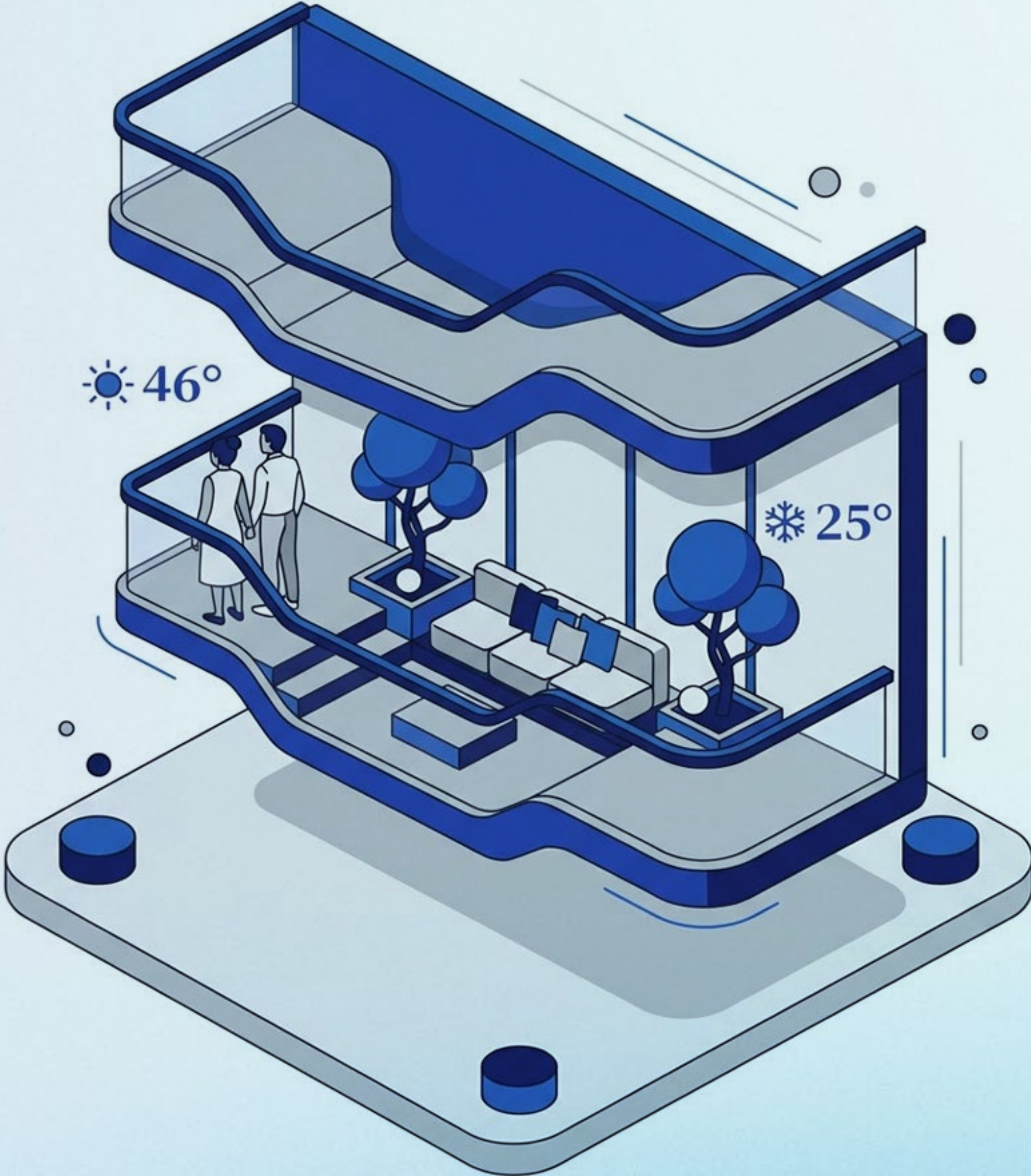
Warm regards,

Sufian Majed

CEO, REEF ADVANCED COOLING SERVICES (RACS)



SERVICES



OUTDOOR COOLING DESIGN AND BUILD

SERVICE OVERVIEW

Outdoor climate control has become increasingly essential as rising temperatures make open-air environments more difficult to enjoy. At Reef ACS, we are pioneers and the market leader in outdoor cooling solutions, combining exclusive design methodologies, advanced engineering tools, and specialized expertise developed over years of continuous innovation. Our highly skilled engineering team leverages reliable, environmentally friendly cooling technologies to design custom systems that surpass industry standards in comfort, efficiency, and sustainability.

We differentiate ourselves through accurate performance simulations using highly precise and up-to-date weather data, data-driven design optimization, and the ability to tailor cooling strategies to each site's unique climatic and operational requirements. This precision-driven approach ensures every solution delivers optimal comfort with minimal resource consumption.

Our outdoor cooling services span the entire project lifecycle: annual weather analysis, advanced simulation modeling, custom system design, comfort optimization, power-consumption reduction, complete system execution, testing, and commissioning. Each solution is engineered to deliver maximum performance, reduced environmental impact, and long-term value for clients and end users.

Our pioneering approach consistently reduces operating and maintenance costs, minimizes capital expenditures for developers, and lowers peak electrical demand—all while ensuring superior control over outdoor environmental conditions.

Through innovation, technical excellence, and a steadfast commitment to sustainability and customer value, Reef ACS continues to set the benchmark for outdoor cooling solutions across the region.

↗ Key benefits



ENHANCE PEOPLE'S WELLBEING



ELECTRICITY CONSUMPTION REDUCTION



BOOST PROFITABILITY



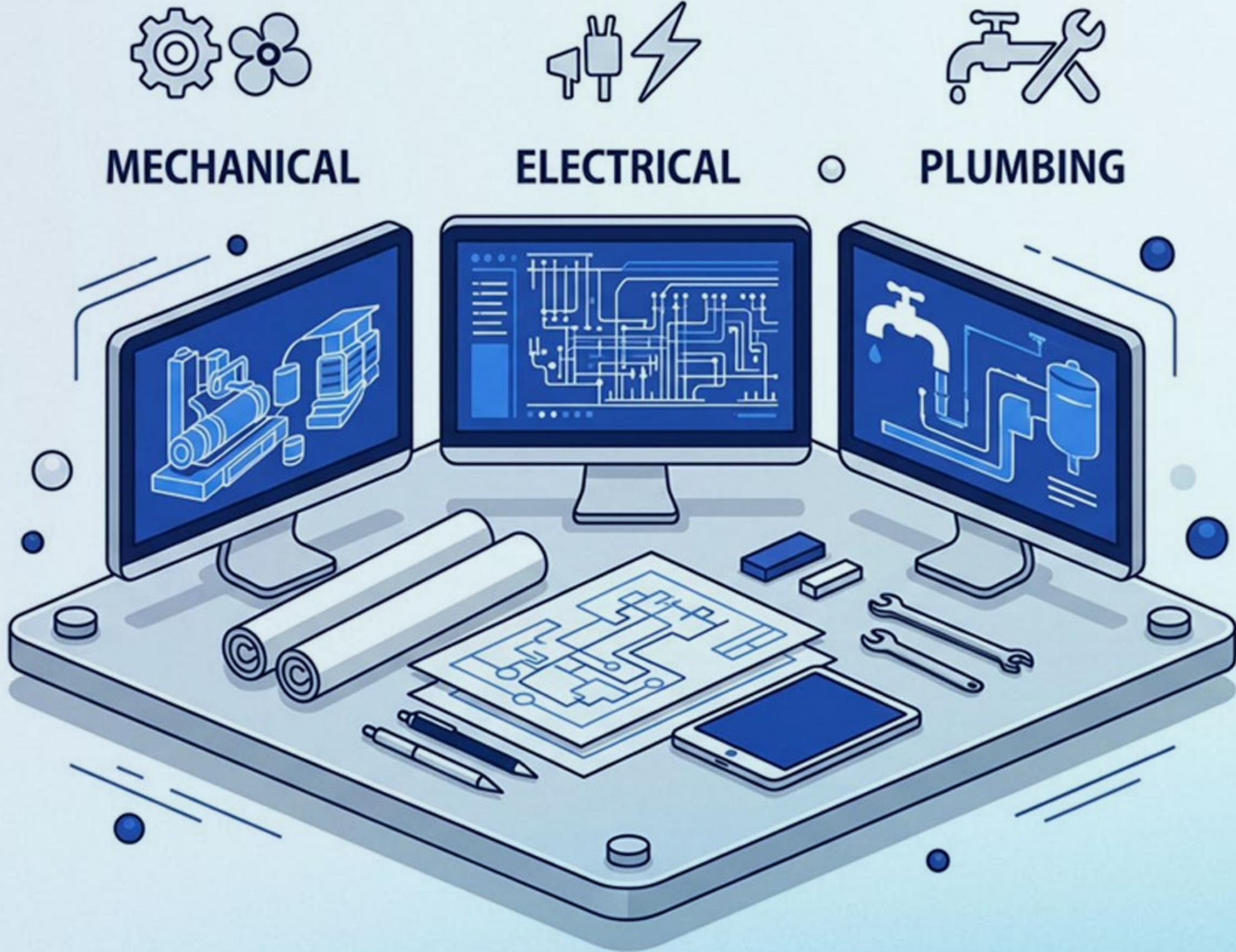
INCREASE PROPERTY AND DEVELOPMENT VALUE

➤ Approach



➤ Application





➤ New Buildings Services
MEP DESIGN

SERVICE OVERVIEW

Our MEP Design services provide a seamless, end-to-end delivery model that integrates engineering excellence. At RACS, we combine multidisciplinary expertise in mechanical, electrical, and plumbing systems to design fully optimized building infrastructure that meets the highest standards of performance, safety, and sustainability.

We approach every project with a focus on energy efficiency, reliability, and lifecycle value. Our design team develops smart, future-ready MEP solutions backed by advanced simulations, load analysis, and engineering best practices.

↗ Key benefits



OPTIMIZED BUILDING PERFORMANCE



FUTURE-PROOF & SCALABLE SOLUTIONS



COMPLIANCE WITH CODES & STANDARDS



SUSTAINABILITY & GREEN BUILDING INTEGRATION



ENHANCED COMFORT & INDOOR AIR QUALITY



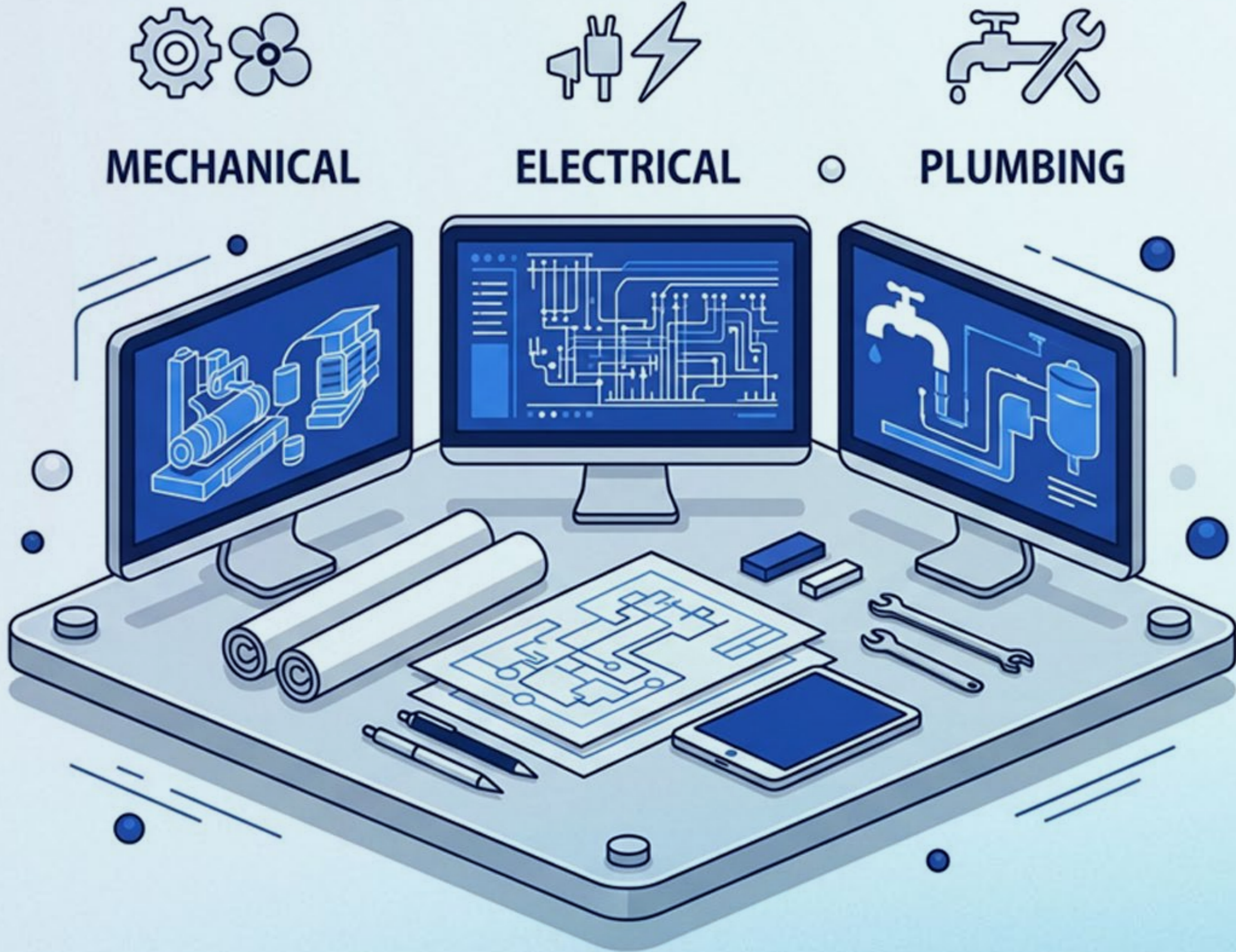
ADVANCED TECHNOLOGY/SOFTWARE UTILIZATION

➤ Approach



➤ Application





➤ New Buildings Services

MEP CONSTRUCTION

SERVICE OVERVIEW

At RACS, our MEP Construction Services deliver high-quality execution of mechanical, electrical, and plumbing systems for projects of all scales and complexities. We combine multidisciplinary expertise with robust engineering practices to procure, construct, and commission fully optimized building infrastructure that meets the highest standards of performance, safety, and sustainability.

Our construction teams transform engineered designs into fully operational systems with meticulous precision. From equipment installation and system integration to rigorous testing and commissioning, we ensure that every component operates seamlessly within the wider building environment. This disciplined, quality-driven approach ensures reliability, efficiency, and long-term operational value for our clients.

↗ Key benefits



SEAMLESS PROJECT EXECUTION



QUALITY ASSURANCE & COMPLIANCE



COST CONTROL & BUDGET OPTIMIZATION



ON-SITE EXPERTISE & SKILLED WORKFORCE



RISK MITIGATION



INTEGRATION WITH DESIGN INTENT



ADVANCED TOOLS & TECHNOLOGY



SUSTAINABILITY IN CONSTRUCTION

↗ Approach

01

PROCUREMENT

02

CONSTRUCTION

03

TESTING AND
COMMISSIONING

↗ Application

RESIDENTIAL

COMMERCIAL

HOSPITALITY

INDUSTRIAL

INSTITUTIONAL

MIXED-USE



➤ Existing Buildings Services
ENERGY EFFICIENCY

SECTOR OVERVIEW

Our Energy Efficiency Services provide comprehensive, end-to-end solutions designed to optimize building performance and reduce operational costs.

Our process begins with ASHRAE 211 Level 1, 2, and 3 energy audits, supported by a rigorous Measurement and Verification (M&V) plan in accordance with IPMVP standards. Based on the audit outcomes, we deliver detailed engineering design, execute construction, conduct testing and commissioning, and provide ongoing M&V reporting.

We further support clients with continuous energy management to ensure sustained performance enhancement and long-term energy savings.

↗ Key benefits



WATER CONSUMPTION REDUCTION



ELECTRICITY CONSUMPTION REDUCTION



BUILDINGS EFFICIENCY IMPROVEMENT



OPERATIONAL COSTS SAVINGS

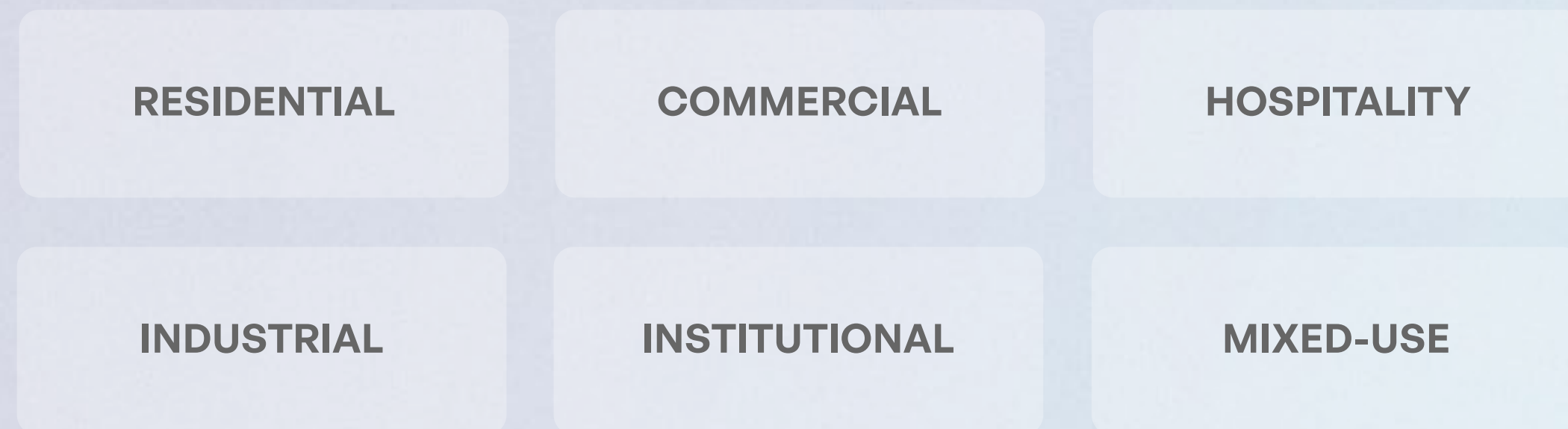


CARBON EMISSIONS REDUCTION

↗ Energy Retrofit Project Approach



↗ Application





➤ Existing Buildings Services
DELTA-T SERVICES

SECTOR OVERVIEW

Our Delta T Services are designed to eliminate Delta T surcharges, reduce wasted pumping energy, lower maintenance costs, prevent system capacity deration, and enhance overall tenant comfort.

We apply a structured and systematic methodology beginning with a comprehensive Delta T root cause analysis to diagnose the sources of low Delta T syndrome at the building level, whether for standalone cooling systems or those connected to district cooling networks.

This analysis covers key areas including HVAC design, tenant spaces, zones and connected loads, commissioning and maintenance practices, operational behavior, automation strategies, and overall control philosophy.

Following the diagnostic phase, we develop detailed engineering designs to address the identified issues, then execute the full implementation through construction, testing, and commissioning of corrective solutions. Our approach ensures measurable performance improvements and long-term operational efficiency.

↗ Key benefits



ENERGY CONSUMPTION REDUCTION



SURCHARGE FEES REDUCTION



O&M EFFICIENCY IMPROVEMENT



OCCUPANT THERMAL COMFORT

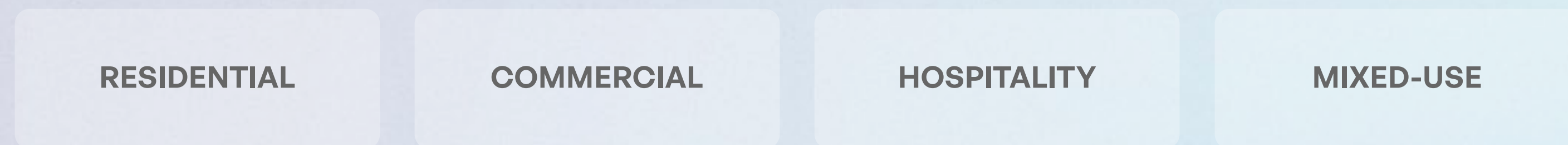


CARBON EMISSIONS REDUCTION

↗ Delta-T Project Approach



↗ Application





➤ Existing Buildings Services

MEP DESIGN PEER REVIEW

SECTOR OVERVIEW

Our MEP Design Peer Review services provide an expert, independent assessment of mechanical, electrical, and plumbing systems to ensure technical accuracy, operational efficiency, and long-term value for building owners and developers.

At RACS, we focus on elevating project performance by identifying design gaps, validating engineering assumptions, and ensuring that every system meets the highest standards of safety, reliability, and compliance.

A core component of our approach is the integration of energy efficiency and value engineering principles. We carefully analyze system configurations, equipment sizing, control strategies, and design parameters to uncover opportunities for reduced energy consumption, optimized system performance, and lower lifecycle costs. Through advanced modeling, engineering simulation, and performance benchmarking, we help refine designs to achieve optimal functionality while minimizing capital expenditure and operational costs.

Our multidisciplinary team combines deep expertise in HVAC engineering, electrical systems, plumbing design, energy modeling, and sustainability frameworks. This enables us to offer comprehensive and actionable recommendations that enhance building performance, improve constructability, and support long-term operational excellence. Whether reviewing a new development or optimizing an existing design, our peer review process ensures that MEP solutions are robust, efficient, cost-effective, and aligned with international best practices.

↗ Key benefits



IMPROVED ENERGY EFFICIENCY AND SYSTEM PERFORMANCE



SIGNIFICANT REDUCTION IN CAPEX AND OPEX



EARLY DETECTION OF DESIGN ISSUES AND RISKS



ENHANCED RELIABILITY, SAFETY, AND COMPLIANCE



OPTIMIZED SYSTEM INTEGRATION ACROSS DISCIPLINES



BETTER INFORMED DECISION-MAKING



INCREASED BUILDING VALUE AND OPERATIONAL RESILIENCE

↗ Project Approach



↗ Application





➤ Existing Buildings Services

COOLING LOAD EVALUATION SERVICES

SECTOR OVERVIEW

Our Cooling Load Evaluation service provides an accurate, data-driven evaluation of a facility's cooling requirements to ensure optimal system performance, energy efficiency, and long-term reliability. We conduct a comprehensive review of all available engineering documentation, including HAP, IES, and other simulation files, to verify the accuracy of existing load calculations and identify any gaps or inconsistencies.

To strengthen our analysis, we also examine historical trending data from existing systems, such as temperature profiles, equipment loading, and energy consumption, to understand real operating patterns and diagnose potential inefficiencies.

Our team carries out a detailed on-site survey, assessing equipment conditions, space usage, external heat gains, system configurations, and actual operating conditions. This integrated approach allows us to validate assumptions, refine load calculations, and ensure accurate sizing of cooling equipment. All findings are consolidated into a comprehensive technical report, complete with load validation, identified discrepancies, system performance insights, and clear recommendations for optimization, right-sizing, or future system upgrades. Our Cooling Load Assessment provides clients with reliable and actionable insights that support informed decision-making and ensure their cooling systems operate efficiently, safely, and effectively.

↗ Project Approach

01

DESKTOP
ANALYSIS

02

SITE
SURVEY

03

TECHNICAL
ANALYSIS
REPORTING

↗ Application

RESIDENTIAL

COMMERCIAL

HOSPITALITY

INDUSTRIAL

INSTITUTIONAL

MIXED-USE

↗ Existing Buildings Services

THERMAL COMFORT AND INDOOR AIR QUALITY (IAQ)



SECTOR OVERVIEW

Our Thermal Comfort and IAQ Assessment service provides a comprehensive evaluation of indoor environmental conditions to ensure occupant well-being, energy efficiency, and regulatory compliance. The service combines data analysis of existing building systems and historical performance with a thorough on-site survey to assess thermal comfort, airflow, ventilation effectiveness, and indoor air quality.

All findings are consolidated into a detailed, comprehensive report, including:

1. Observations from the site and data analysis
2. Recommendations for improvements
3. An actionable plan with categorized interventions (low, medium, and high cost)
4. A Bill of Quantities (BOQ) for proposed actions
5. Actions rated according to their impact on thermal comfort and IAQ

If the client chooses to proceed with the recommended actions, we extend our services to detailed design, procurement, construction, and testing & commissioning, ensuring that all interventions are implemented efficiently and effectively to achieve the desired comfort and air quality levels. Our structured, impact-driven approach allows clients to prioritize investments, optimize indoor environments, and enhance occupant satisfaction while maintaining cost efficiency.

↗ Project Approach



↗ Application



➤ Existing Buildings Services

CHILLED WATER OPTIMIZATION



SECTOR OVERVIEW

Our Chilled Water Optimization service delivers a thorough evaluation of a facility's chilled water systems to improve energy efficiency, reduce operational costs, and enhance overall system performance. The service combines **data analysis** of existing system performance with a comprehensive on-site survey to assess equipment operation, system configuration, flow distribution, and cooling efficiency.

All findings are compiled into a **detailed, comprehensive report**, which includes:

1. Observations from site surveys and data analysis
2. Recommendations and actionable solutions to optimize performance

If the client chooses to implement the proposed solutions, we extend our services to **detailed design, procurement, construction, and testing & commissioning**, ensuring that the chilled water system is optimized effectively and operates reliably to deliver maximum efficiency and performance.

Our approach provides clients with clear insights, actionable solutions, and a seamless path from assessment to implementation, helping achieve energy savings and long-term operational reliability.

↗ Key benefits



ENERGY EFFICIENCY IMPROVEMENT



LOWER OPERATIONAL COSTS



ENHANCED SYSTEM PERFORMANCE



EXTENDED EQUIPMENT LIFE



PEAK LOAD REDUCTION



IMPROVED COMFORT CONDITIONS



INCREASING SYSTEM'S AVAILABLE CAPACITY

↗ Project Approach



↗ Application



➤ Existing Buildings Services

METERING AND SUBMETERING



SECTOR OVERVIEW

Our Metering and Submetering service provides precise measurement and monitoring of chilled water consumption, enabling better system control, operational efficiency, and fair billing across facilities. Accurate metering is essential for optimizing chilled water system performance, identifying inefficiencies, and ensuring that energy is used effectively.

The service includes the design, installation, and commissioning of **main meters and submeters** for individual zones, buildings, or tenants, allowing detailed monitoring of consumption patterns and performance benchmarking. Our team carries out detailed analysis and provides metering strategy, and the service extends to **procurement and installation** of metering infrastructure.

By implementing metering and submetering, clients gain full visibility of chilled water usage, enhance operational control, and ensure fair and transparent cost allocation.

↗ Key benefits



IMPROVED SYSTEM CONTROL AND OPTIMIZATION



ACCURATE BILLING AND COST ALLOCATION



ENERGY MANAGEMENT &
SUSTAINABILITY INITIATIVES



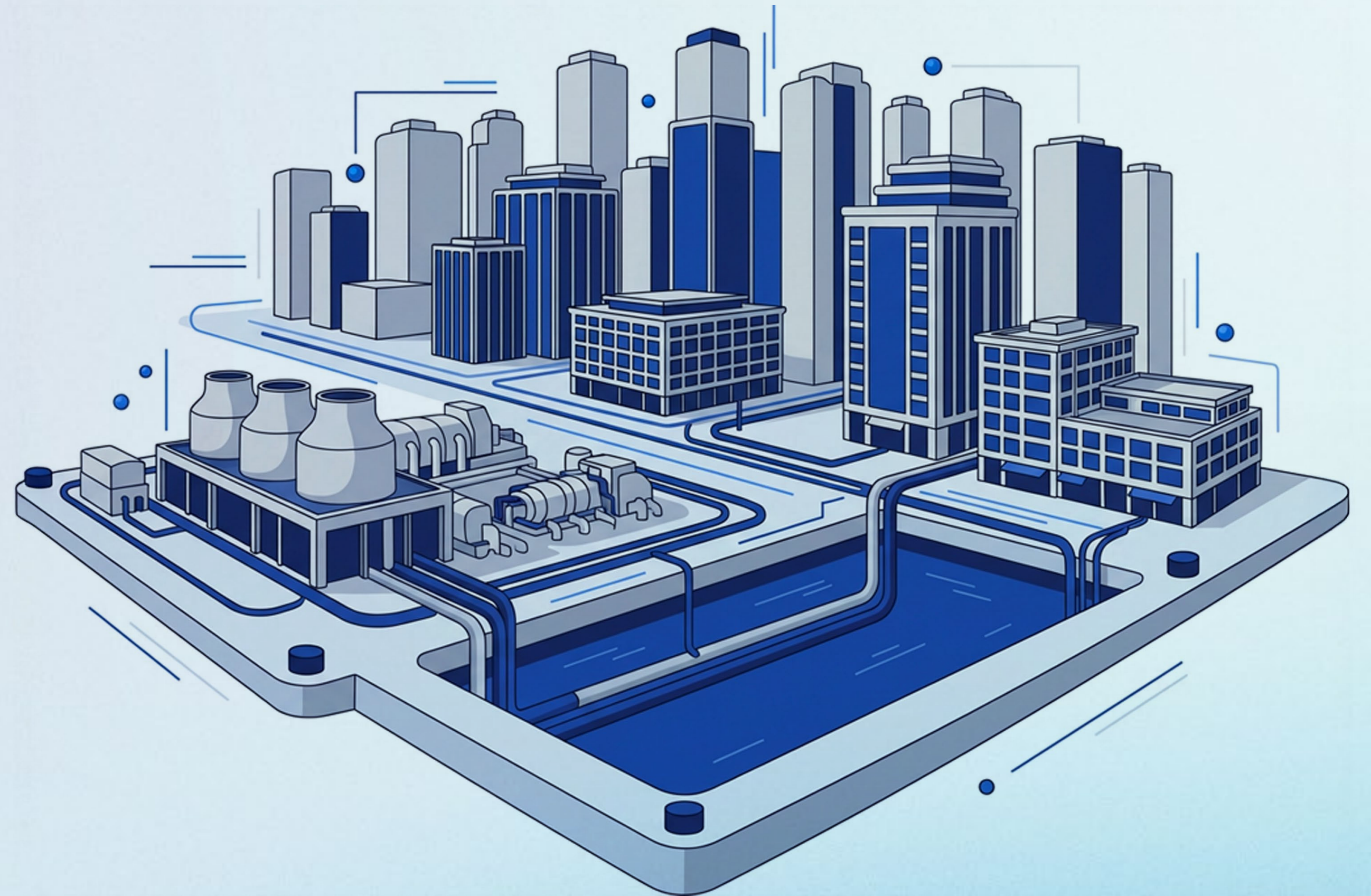
EARLY DETECTION OF SYSTEM ISSUES
OR INEFFICIENCIES

↗ Project Approach



↗ Application





➤ District Cooling Services

ENERGY OPTIMIZATION

SECTOR OVERVIEW

Our District Cooling Services provide comprehensive solutions for District Cooling Plants, ensuring efficiency, reliability, and regulatory compliance. From feasibility studies and EPC execution for new DCPs to energy performance optimization and Delta T management for existing DCPs, we deliver end-to-end expertise tailored to meet the demands of modern urban developments. Our services also include providing advisory support to (DCPs) for establishing regulatory frameworks and ensuring full compliance with applicable regulations

Our District Cooling Services focus on optimizing the performance, reliability, and sustainability of **existing district cooling plants**. Leveraging advanced technologies, data-driven optimization, and industry best practices, we help clients reduce energy consumption, lower operating costs, and enhance overall system efficiency. Our end-to-end solutions include plant performance assessments, energy audits, system retrofits, and smart control upgrades, from design through construction, as well as comprehensive measurement and verification and continuous energy management.

↗ Key benefits



ENERGY CONSUMPTION REDUCTION



SURCHARGE FEES REDUCTION



O&M EFFICIENCY IMPROVEMENT



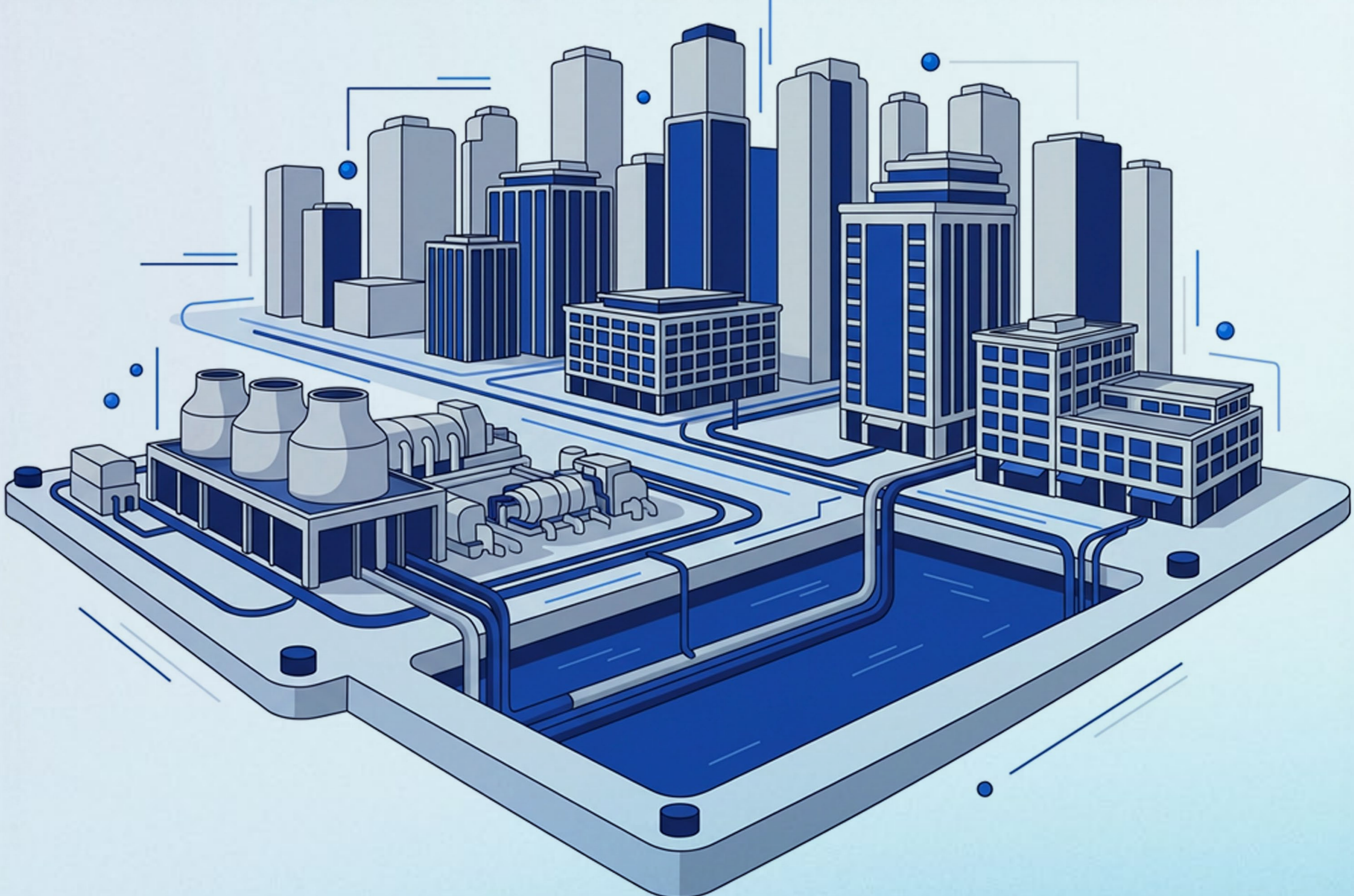
PROFITABILITY BOOST



CARBON EMISSIONS REDUCTION

➤ Plant Optimization Retrofit Project Approach





➤ District Cooling Services

EPC

SECTOR OVERVIEW

Our District Cooling Plant EPC services deliver end-to-end solutions for the design, construction, and commissioning of high-efficiency, sustainable cooling infrastructure. At RACS, we combine deep engineering expertise, advanced procurement strategies, and robust construction management to execute turnkey projects that meet the highest standards of performance, reliability, and environmental sustainability. From conceptual design and detailed engineering to equipment procurement, installation, and commissioning, our multidisciplinary teams ensure every system component is optimized for energy efficiency, operational reliability, and long-term maintainability. We integrate mechanical, electrical, and control systems seamlessly to deliver fully functional district cooling plants capable of meeting diverse cooling demands across commercial, residential, and mixed-use developments.

By managing the full project lifecycle under a single accountable entity, we minimize coordination challenges, accelerate delivery timelines, and ensure that the plant performs as intended from day one. RACS' District Cooling Plant EPC services provide clients with energy-efficient, cost-effective, and sustainable cooling solutions for the long term.

↗ District cooling EPC Project Approach



↗ Key benefits



OPTIMIZED PLANT DESIGN



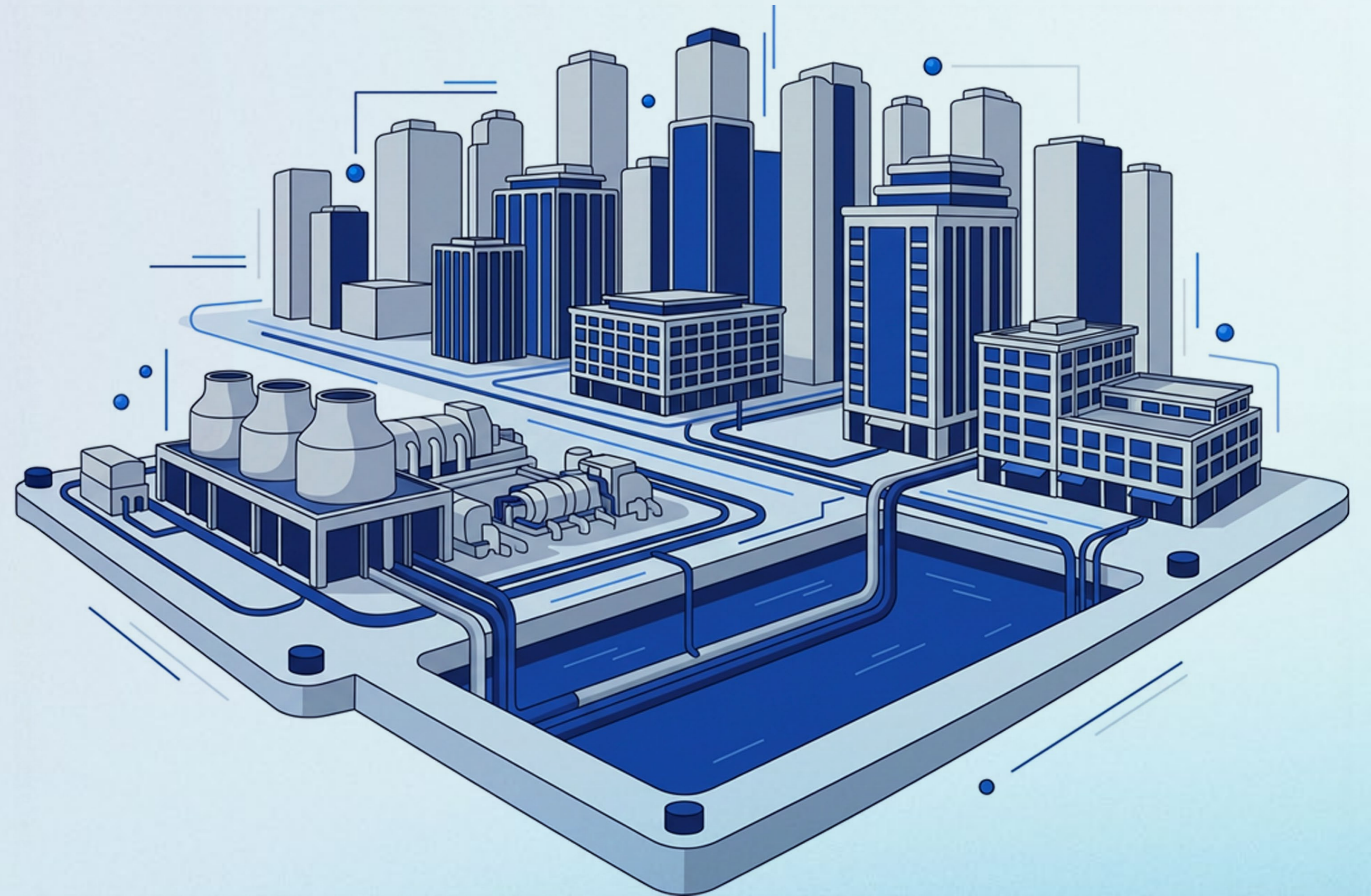
QUALITY-FOCUSED PROCUREMENT



PRECISION CONSTRUCTION AND INTEGRATION



COMPREHENSIVE TESTING AND COMMISSIONING



➤ District Cooling Services
FEASIBILITY STUDY

SECTOR OVERVIEW

Our District Cooling Feasibility Study service provides a comprehensive evaluation of the technical and financial viability of implementing district cooling systems. This service is designed to help clients make informed decisions regarding system design, investment, and long-term operational efficiency.

Technical Assessment:

- **Load Analysis:** Detailed evaluation of cooling demand across buildings or zones.
- **Plant Sizing:** Determination of optimal plant capacity to meet current and future cooling requirements.
- **Plant Configuration:** Assessment of system layout, equipment selection, and distribution strategies to ensure operational efficiency and reliability.

Financial Assessment:

- **Capital Expenditure (CapEx):** Estimation of initial investment costs for plant, distribution infrastructure, and equipment.
- **Operational Expenditure (OpEx):** Projection of ongoing operating costs, including energy consumption, maintenance, and staffing.

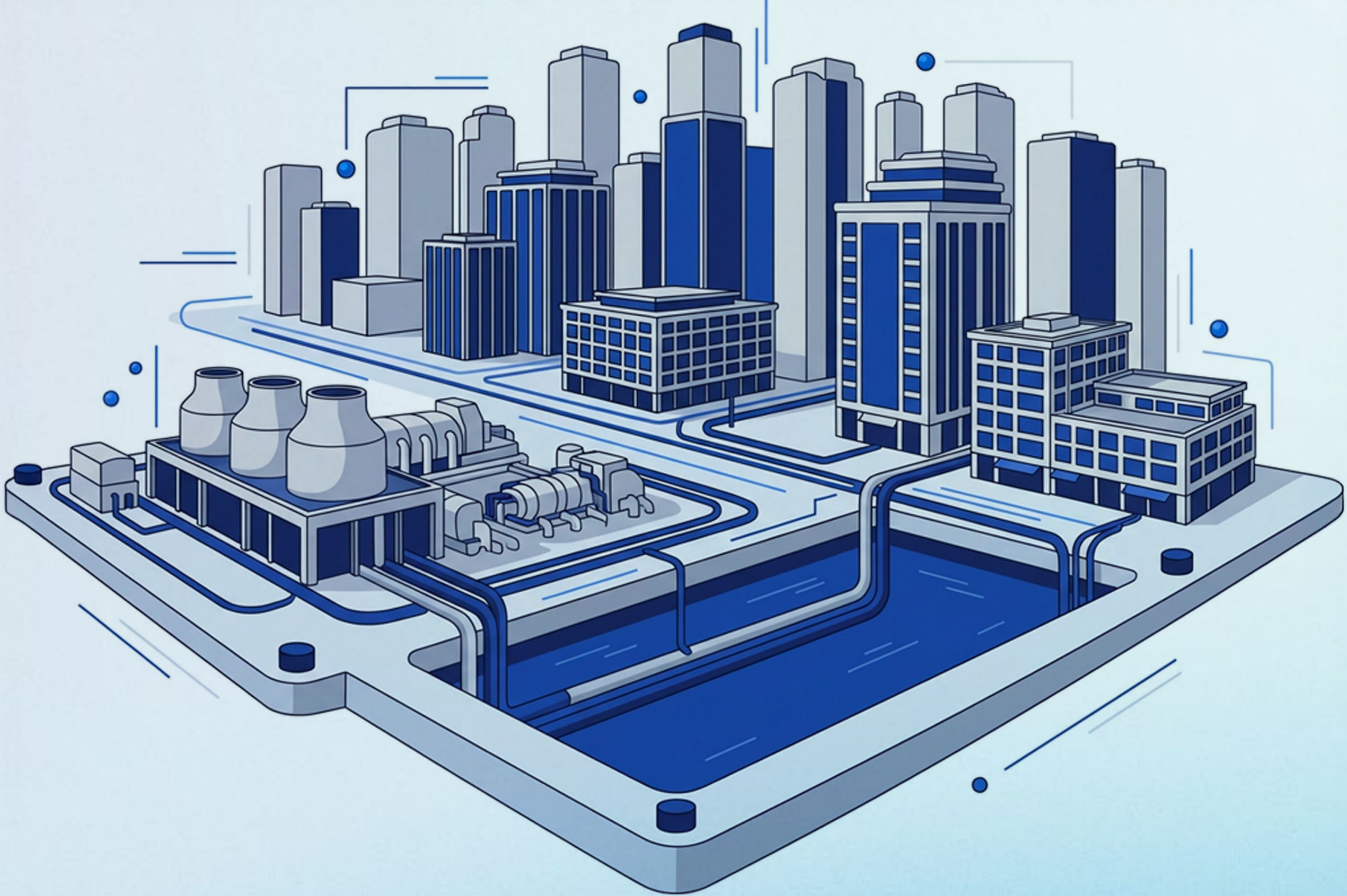
The study culminates in a **comprehensive report** combining technical and financial insights, enabling clients to evaluate feasibility, optimize system design, and make informed investment decisions. By providing a data-driven, integrated analysis of both technical and financial aspects, our service ensures that district cooling projects are planned efficiently, cost-effectively, and sustainably.

↗ Approach



↗ Key benefits





➤ District Cooling Services

DELTA-T MANAGEMENT

SECTOR OVERVIEW

The District Cooling Delta-T Program is a strategic approach developed to address low delta-T issues across multiple assets in a service provider's portfolio. Low delta-T can lead to inefficient system performance, higher energy consumption, increased CO₂ emissions, and potential penalties. Our program provides a structured methodology to assess, optimize, and improve delta-T performance while maximizing operational efficiency.

The service includes a comprehensive framework that spans both technical and organizational aspects:

By combining technical assessment, financial planning, and stakeholder engagement, the Delta-T Program enables service providers to **enhance cooling efficiency, reduce utility consumption, lower CO₂ emissions, avoid penalties, and optimize chilled water usage** across their portfolio.

↗ Key benefits



ENHANCE COOLING EFFICIENCY



REDUCE UTILITY CONSUMPTION



BOOST PROFITABILITY



LOWER CO₂ EMISSIONS



OPTIMIZE CHILLED WATER USAGE

↗ Approach

01

PROOF OF
CONCEPT &
BUSINESS CASE

02

TARGET SETTING &
PRIORITIZATION

03

BUDGET &
FINANCIAL PLAN

04

INTERNAL PROCESS
DEVELOPMENT

05

ENGAGEMENT
& PARTNERSHIP
FRAMEWORK

06

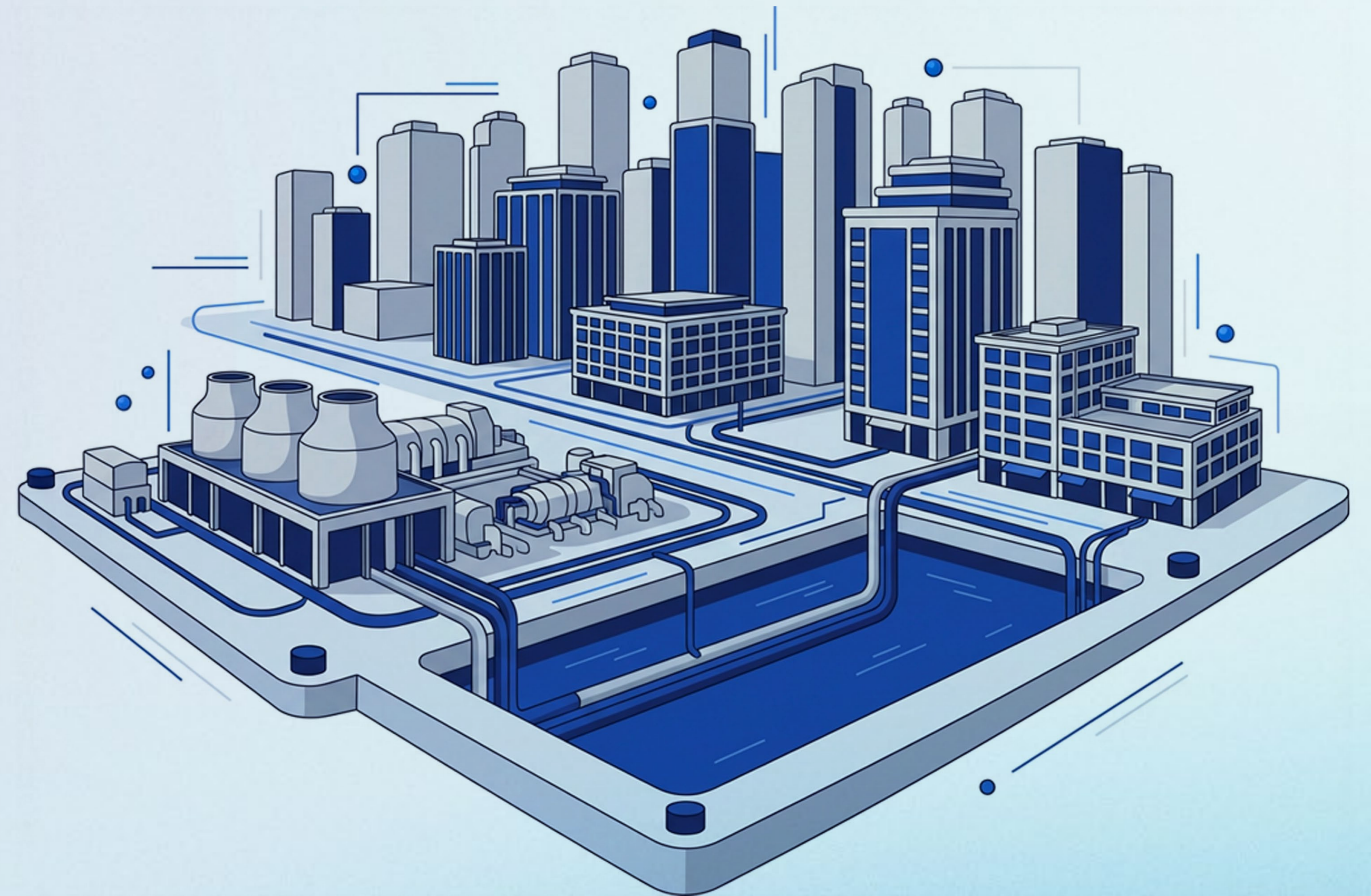
LEGAL &
CONTRACTING

07

END-USER
COMMUNICATION
FRAMEWORK

08

INTEGRATED
RETROFITTING PLAN



➤ District Cooling Services

REGULATORY FRAMEWORKS & REGULATIONS ALIGNMENT

SECTOR OVERVIEW

We help District cooling providers establish robust regulatory frameworks and achieve consistent compliance with regulations such as RSB. Our services span policy design, governance structures, tariff methodology, and performance benchmarks, ensuring operations align with local authority requirements and international best practices. By integrating technical standards, commercial safeguards, and customer protection measures, we create transparent, bankable, and sustainable district cooling markets.

WHAT WE DO:

- **Framework Development:** Draft regulatory policies, codes of practice, and licensing requirements tailored to market maturity and stakeholder needs.
- **Tariff & Contract Governance:** Define fair pricing structures, cost-of-service models, and customer agreements to ensure transparency and long-term viability.
- **Technical Standards & KPIs:** Set and harmonize performance indicators (e.g., Delta T, energy use, reliability) and maintenance standards to drive operational excellence.
- **Compliance & Alignment:** Map current practices to regulatory obligations; develop compliance checklists, reporting templates, and audit processes.
- **Stakeholder Engagement:** Facilitate consultations with authorities, utilities, developers, ESCOs, and end-users to secure alignment and buy-in.
- **Capacity Building:** Provide training, guidance documents, and SOPs to institutionalize regulatory adherence within organizations.

↗ Key benefits



CLEAR, ENFORCEABLE RULES THAT REDUCE RISK AND IMPROVE MARKET CONFIDENCE



OPTIMIZED PERFORMANCE AND CUSTOMER OUTCOMES THROUGH MEASURABLE KPIS



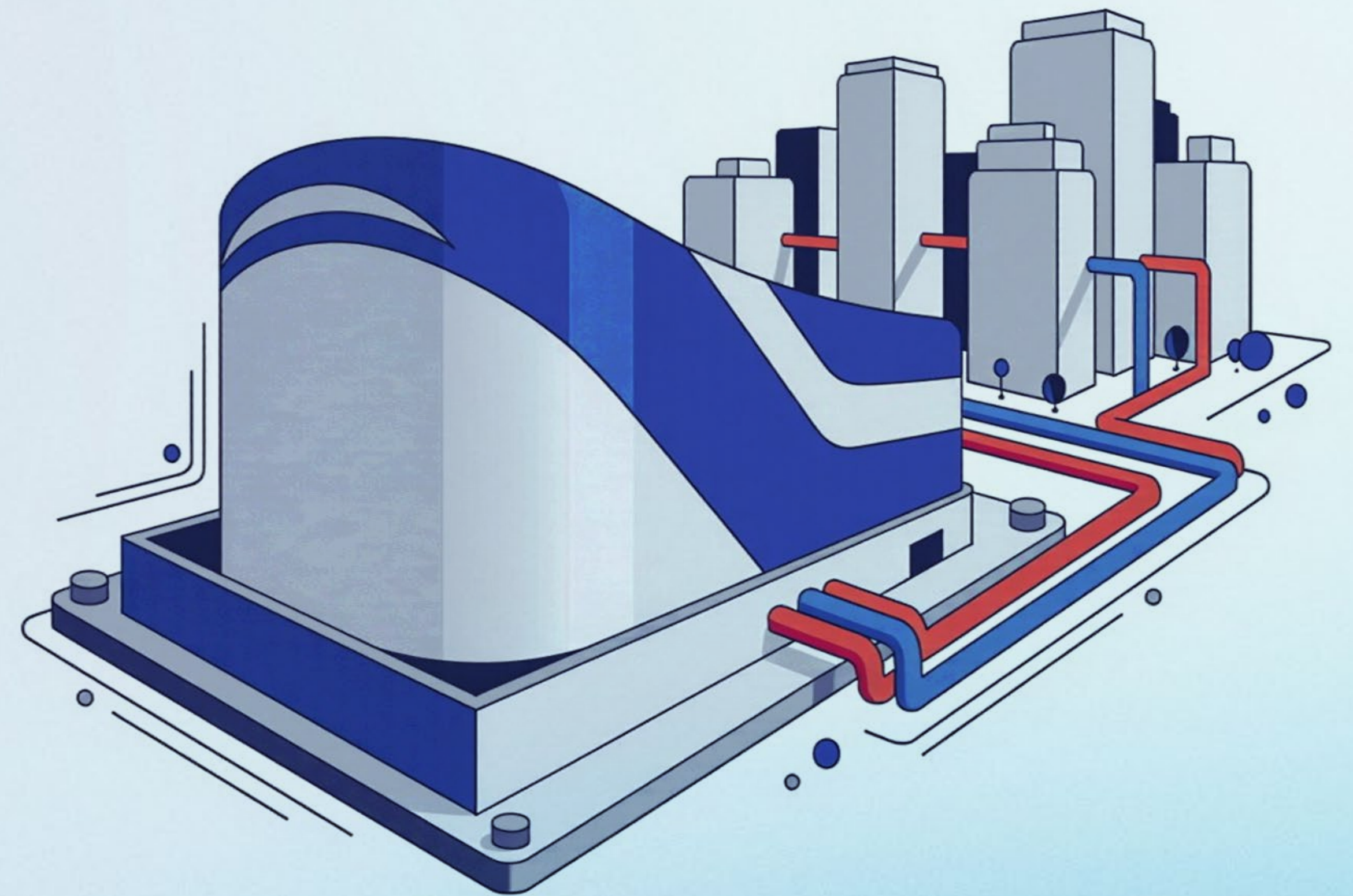
BANKABLE, TRANSPARENT TARIFF STRUCTURES AND CONTRACT FRAMEWORKS



STREAMLINED AUDITS, REPORTING, AND CONTINUOUS COMPLIANCE

↗ Delta T Rehabilitation

- **STANDALONE COOLING**
- **BUILDING ETS**
- **DISTRICT COOLING PLANT**





COOLING AS A SERVICE

SERVICE OVERVIEW

Our tailor made cooling solutions minimise the space and aesthetic impact for buildings and developments along with improving maintenance and operations with experienced know-how. Our flexibility suits any phasing – as each development has its unique cost model and program we have multiple solutions to cater for them.

➤ How it Works: To help the client close the loop in obtaining easily savings, we offer financing or partnership options as follows:

Full Utility Provider

The developer signs a 15 - 20 year Cooling Service Agreement with RACS, which requires:

- Connection Fee
- Yearly Demand Charge
- Monthly Usage Fee

SPV Utility

The developer signs a 15 - 20 year Cooling Service Agreement with RACS, which requires:

- Connection Fee
- 3 - 5 Years Financing Period
- Monthly Usage Fee

Purchase + OM

The developer purchases the whole system and enters into an O&M with United Cool as required:

Key Benefits

Cost-Eective Solutions

Gain access to high-quality cooling at competitive prices without the need to divert budgetary resources towards purchasing expensive equipment.

Risk Mitigation

As the technology provider manages all operational aspects, clients do not bear the risks associated with system performance or maintenance issues.

Focus on Core Operations

With cooling concerns handled by the provider, businesses can concentrate on their primary objectives and enhance overall productivity.

Advantages for Technology

Continuous Revenue Stream

Continuous Revenue Stream: The CAAS model offers technology providers a steady income, fostering financial stability and paving the way for growth opportunities.

Long-Term Client Partnerships

Building strong relationships with clients based on trust and reliability leads to improved service delivery and customer satisfaction.

Innovation and Responsiveness

Providers are incentivized to equip clients with the latest, most efficient cooling technologies, ensuring optimal performance and ongoing improvements.

COMPUTATIONAL FLUID DYNAMICS (CFD)



SECTOR OVERVIEW

At Reef ACS, our Computational Fluid Dynamics (CFD) services leverage advanced simulation techniques to accurately model airflow, heat transfer, and environmental behavior across complex indoor and outdoor environments. By integrating precise, up-to-date weather data, we ensure that every simulation reflects real-world climatic conditions, particularly important in the GCC's dynamic and extreme climate. This enables us to deliver highly reliable insights into thermal comfort, ventilation efficiency, pollutant dispersion, cooling performance, and environmental microclimates.

Our CFD capabilities support a wide spectrum of applications, including outdoor cooling design, HVAC optimization, smoke movement studies, district cooling performance, wind comfort analysis, and architectural design refinement. Using cutting-edge modeling tools and high-fidelity simulation engines, we analyze system behavior under realistic operational and environmental scenarios, helping clients predict performance, resolve critical design challenges, and enhance overall system reliability.

Through accurate modeling, data-driven analysis, and deep engineering expertise, Reef ACS delivers CFD solutions that minimize risk, reduce costly redesigns, optimize performance, and ensure that engineering decisions are supported by scientifically validated results. Our goal is to empower developers, architects, and engineers with the foresight needed to create high-performing, comfortable, and sustainable built environments.

↗ Key benefits



REAL-WORLD ACCURACY



COST AND TIME EFFICIENCY



OPTIMIZED SYSTEM PERFORMANCE



ENHANCED DECISION-MAKING



IMPROVED COMFORT LEVEL

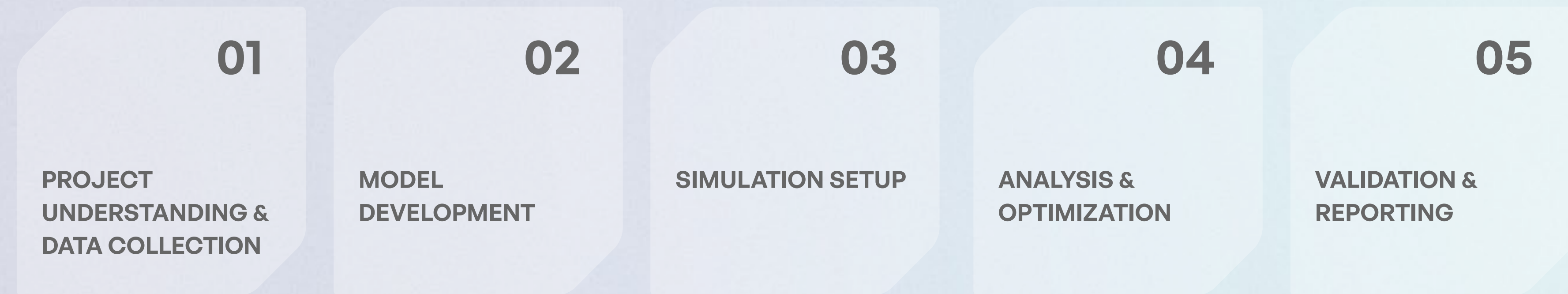


FASTER PROJECT DELIVERY

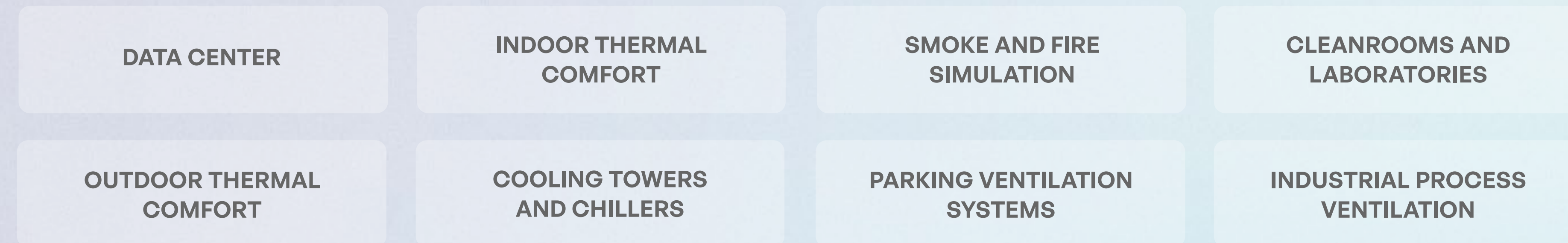





INCREASED ENERGY EFFICIENCY

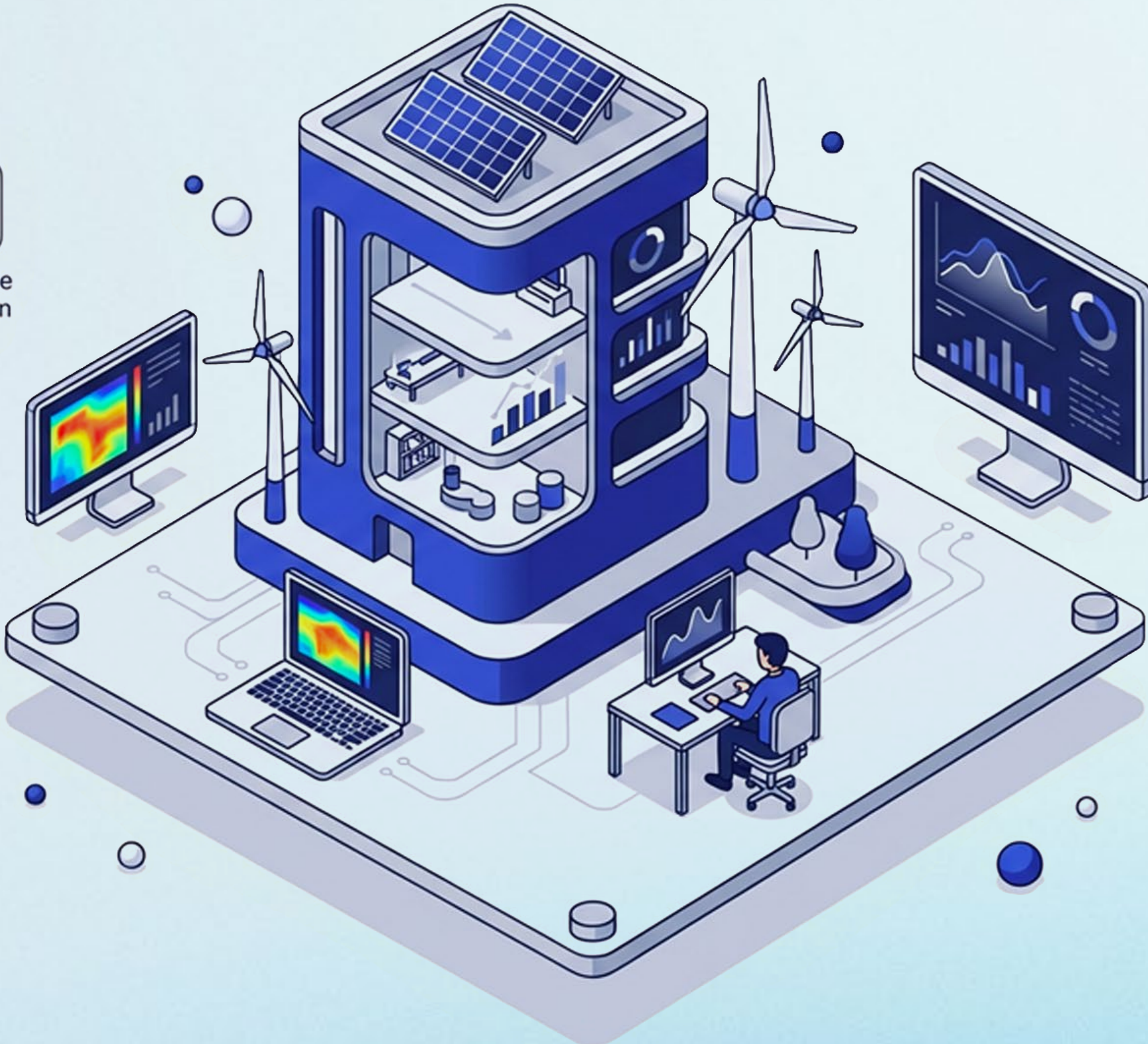
↗ Our Approach to CFD Services



↗ Application



- 
Thermal Analysis
- 
Energy Simulations
- 
Renewable Integration



ENERGY MODELING SERVICES

SECTOR OVERVIEW

At Reef ACS, our Energy Modeling Services provide a powerful foundation for designing high-performance, energy-efficient buildings and optimizing existing facilities.

Using advanced simulation platforms, we evaluate how architectural features, mechanical systems, weather conditions, and occupant behavior interact to influence a building's overall energy performance. By leveraging accurate, region-specific climate data, we deliver precise insights that empower clients to make informed decisions aligned with both sustainability goals and operational efficiency.

Our energy models support every stage of a building's lifecycle, from early design conceptualization to detailed engineering, energy auditing, and systems commissioning. We assess energy consumption, thermal comfort, HVAC system behavior, renewable energy potential, and cost-saving opportunities, enabling us to identify optimal design strategies and system configurations. Whether for new construction or existing buildings, our modeling approach reduces risk, minimizes energy waste, and ensures compliance with international standards and green building rating systems, including LEED BD+C and LEED for Cities and Communities.

Backed by multidisciplinary expertise in HVAC engineering, controls optimization, building physics, and sustainability, our team delivers modeling solutions that enhance comfort, reduce environmental impact, and maximize long-term economic value. Our goal is to transform data into actionable insights that create buildings that perform better, cost less to operate, and support the wellbeing of the people who use them.

↗ Key benefits



REAL-WORLD ACCURACY



COST AND TIME EFFICIENCY



OPTIMIZED SYSTEM PERFORMANCE



ENHANCED DECISION-MAKING



IMPROVED COMFORT LEVEL



FASTER PROJECT DELIVERY



INCREASED ENERGY EFFICIENCY

↗ Energy Modeling Project Approach

01

DATA
COLLECTION

02

GEOMETRY
BUILDING

03

WEATHER ANALYSIS
(SOLAR AND WIND)

04

LOAD CALCULATION
& HVAC SYSTEMS
DESIGN

05

SIMULATION
RESULTS ANALYSIS

06

OPTIMIZATION &
RECOMMENDATIONS



SUSTAINABILITY CONSULTING SERVICES

SECTOR OVERVIEW

At Reef ACS, our Sustainability Services are designed to support the creation of high-performance buildings and communities that deliver long-term environmental, economic, and human wellbeing benefits. We develop tailored **sustainability strategies** for both **building-level projects and large-scale masterplan developments**, ensuring that sustainability is embedded from early planning through design, construction, and ongoing operation.

Our approach is guided by a holistic framework that considers all major **pillars of sustainability: energy, water, waste, materials, ecology, and the broader environment**. By addressing each of these pillars comprehensively, we help clients minimize resource consumption, reduce environmental impacts, enhance occupant comfort, and maximize lifecycle value. Every strategy is evaluated through three key perspectives:

- **Environment:** reducing carbon footprint, optimizing resource efficiency, and protecting natural ecosystems.
- **Economy:** lowering operating costs, improving asset value, and ensuring long-term financial viability.
- **Wellbeing:** enhancing occupant comfort, health, and overall quality of life across buildings and communities.

Reef ACS provides expert support in achieving compliance with leading **green building and community rating systems**, including LEED, Estidama, Dubai Green Building Regulations, WELL, and other regional and international frameworks. Our services include sustainability goal-setting, performance analysis, integration of innovative design measures, and full certification management.



➤ Sustainability Consulting Services

FRAMEWORK FOR BUILDINGS AND COMMUNITIES

SECTOR OVERVIEW

Our consulting service provides a holistic approach to sustainability, covering energy, water, materials, ecology, and the broader environment. We develop comprehensive frameworks that integrate these aspects into every stage of planning and design.

Our guidelines address all disciplines, including architecture, MEP systems, infrastructure, utilities, landscape, and mobility, ensuring a unified and sustainable vision for buildings and communities. By guiding design, construction, and operational practices, we ensure sustainability targets and KPIs are achieved throughout the whole project lifecycle.

Key Outcomes:

- Clear sustainability vision and governance structure
- Reduced environmental impact and optimized resource use
- Enhanced community well-being and long-term value creation
- Improved Asset Value & Marketability
- Future-Ready, Resilient Developments
- Strong Support for Corporate ESG Goals

↗ Approach

01

PROJECT
UNDERSTANDING

02

KPIS SETTINGS

03

SUSTAINABILITY
FRAMEWORK
STRATEGY
DEVELOPMENT

04

SUSTAINABILITY
GUIDELINES
DEVELOPMENT

05

COORDINATION
WITH ALL
DISCIPLINES

06

DESIGN REVIEW

07

REPORTING

↗ Application

BUILDINGS

COMMUNITIES



➤ Sustainability Consulting Services

GREEN BUILDING AND COMMUNITIES CERTIFICATION

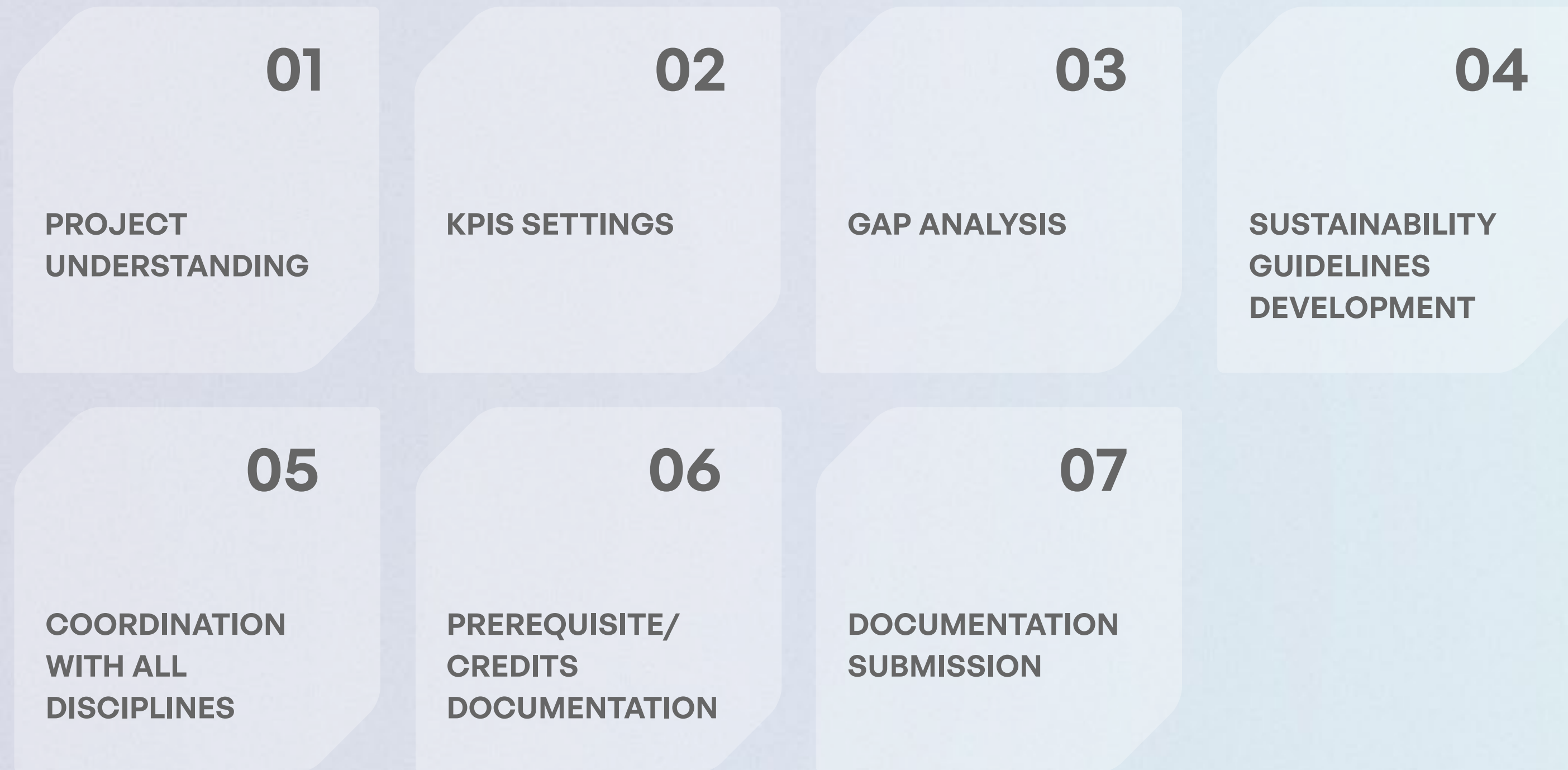
SECTOR OVERVIEW

We guide projects through the entire certification process for leading sustainability standards such as LEED, WELL, Estidama, and BREEAM. Our approach ensures compliance across energy, water, materials, ecology, and environmental performance, while coordinating with all disciplines including architecture, MEP, infrastructure, utilities, landscape, mobility, and signage. By guiding design, construction, and operational practices, we ensure compliance is achieved throughout the whole project lifecycle. From gap analysis to documentation and audit support, we deliver a seamless path to certification that enhances market value and environmental stewardship.

Key Outcomes:

- Reduced environmental impact and optimized resource use
- Enhanced community well-being and long-term value creation
- Successful certification with minimal delays
- Successful certification with low-cost implications
- Improved resource efficiency and occupant well-being
- Increased asset value and regulatory compliance

➤ Approach



➤ Application



➤ DIGITALIZATION
FEASIBILITY STUDIES



SECTOR OVERVIEW

RACS is at the forefront of transforming how organizations manage, monitor, and optimize their energy systems. Through our Digitalization Services, we harness advanced technologies to build smarter, more sustainable, and more efficient operations for buildings, industries, and entire communities.

Our feasibility studies assess the technical, financial, and operational viability of implementing digital solutions for buildings and urban developments. We provide a structured evaluation to help stakeholders make informed decisions about adopting technologies such as **IoT, BIM, Digital Twins, Smart Building Systems, and Smart City Platforms.**

What We Deliver:

- **Current State Assessment:** Analyze existing infrastructure, systems, and digital readiness.
- **Technology Options & Integration:** Identify suitable digital solutions and integration strategies across architecture, MEP, utilities, and mobility.
- **Cost-Benefit Analysis:** Evaluate capital investment, operational savings, and ROI for proposed digitalization initiatives.
- **Regulatory & Compliance Review:** Ensure alignment with local codes, cybersecurity standards, and data governance requirements.
- **Implementation Roadmap:** Provide phased plans for deployment, including timelines, resource allocation, and risk mitigation.

↗ Approach



↗ Key benefits



INFORMED DECISION-MAKING BASED ON
DATA-DRIVEN INSIGHTS



REDUCED IMPLEMENTATION RISKS AND
OPTIMIZED INVESTMENT



CLEAR ROADMAP FOR ACHIEVING SMART
BUILDING AND SMART CITY OBJECTIVES

➤ DIGITALIZATION
DIGITAL TWINS



SECTOR OVERVIEW

Our Digital Twin Development Service empowers businesses to create virtual replicas of physical assets, systems, or processes, enabling real-time monitoring, simulation, and optimization. By integrating IoT sensors, advanced analytics, and 3D modeling, we deliver a dynamic digital representation that mirrors the behavior and performance of its physical counterpart.

Key Features:

- **Real-Time Data Integration:** Connect physical assets with IoT and sensor data for continuous updates.
- **Predictive Analytics:** Utilize AI and machine learning to forecast performance, detect anomalies, and reduce downtime.
- **Simulation & Optimization:** Test scenarios virtually to improve efficiency, reduce costs, and enhance decision-making.
- **Scalable Architecture:** Adaptable solutions for single assets or complex systems across industries.
- **Lifecycle Management:** Support from design and commissioning to operation and maintenance.

↗ Key benefits



ENHANCED OPERATIONAL EFFICIENCY
& RELIABILITY



REDUCED MAINTENANCE COSTS THROUGH
PREDICTIVE INSIGHTS.



ACCELERATED INNOVATION WITH VIRTUAL
TESTING ENVIRONMENTS.



IMPROVED SUSTAINABILITY THROUGH OPTIMIZED
RESOURCE UTILIZATION.

↗ Approach

01

**ASSESSMENT &
STRATEGY**

02

**DATA ACQUISITION &
INTEGRATION**

03

**MODELING &
SIMULATION**

04

**DEPLOYMENT &
VISUALIZATION**

05

**OPTIMIZATION
& CONTINUOUS
IMPROVEMENT**

↗ Application

BUILDINGS

COMMUNITIES

➤ DIGITALIZATION

ENERGY MANAGEMENT INFORMATION SYSTEM (EMIS)



SECTOR OVERVIEW

Our EMIS Development Service provides organizations with a comprehensive platform to monitor, analyze, and optimize energy consumption across facilities and operations. By leveraging advanced data acquisition, analytics, and visualization tools, we enable businesses to achieve energy efficiency, cost savings, and sustainability goals.

Key Features:

- **Real-Time Energy Monitoring:** Track energy usage across multiple assets and locations.
- **Data Integration:** Consolidate data from meters, sensors, and building management systems.
- **Analytics & Reporting:** Generate actionable insights through trend analysis, benchmarking, and predictive modeling.
- **Custom Dashboards:** Interactive visualization for performance tracking and decision-making.
- **Compliance & Standards:** Ensure alignment with ISO 50001 and other energy management standards.

↗ Key benefits



REDUCE OPERATIONAL COSTS THROUGH OPTIMIZED ENERGY CONSUMPTION.



IMPROVED SUSTAINABILITY THROUGH OPTIMIZED RESOURCE UTILIZATION.



ENHANCE DECISION-MAKING WITH ACCURATE, REAL-TIME DATA.



ENABLE PREDICTIVE MAINTENANCE AND LOAD MANAGEMENT.

↗ Approach

01

**ASSESSMENT &
STRATEGY**

02

**DATA ACQUISITION &
INTEGRATION**

03

**MODELING &
SIMULATION**

04

**DEPLOYMENT &
VISUALIZATION**

05

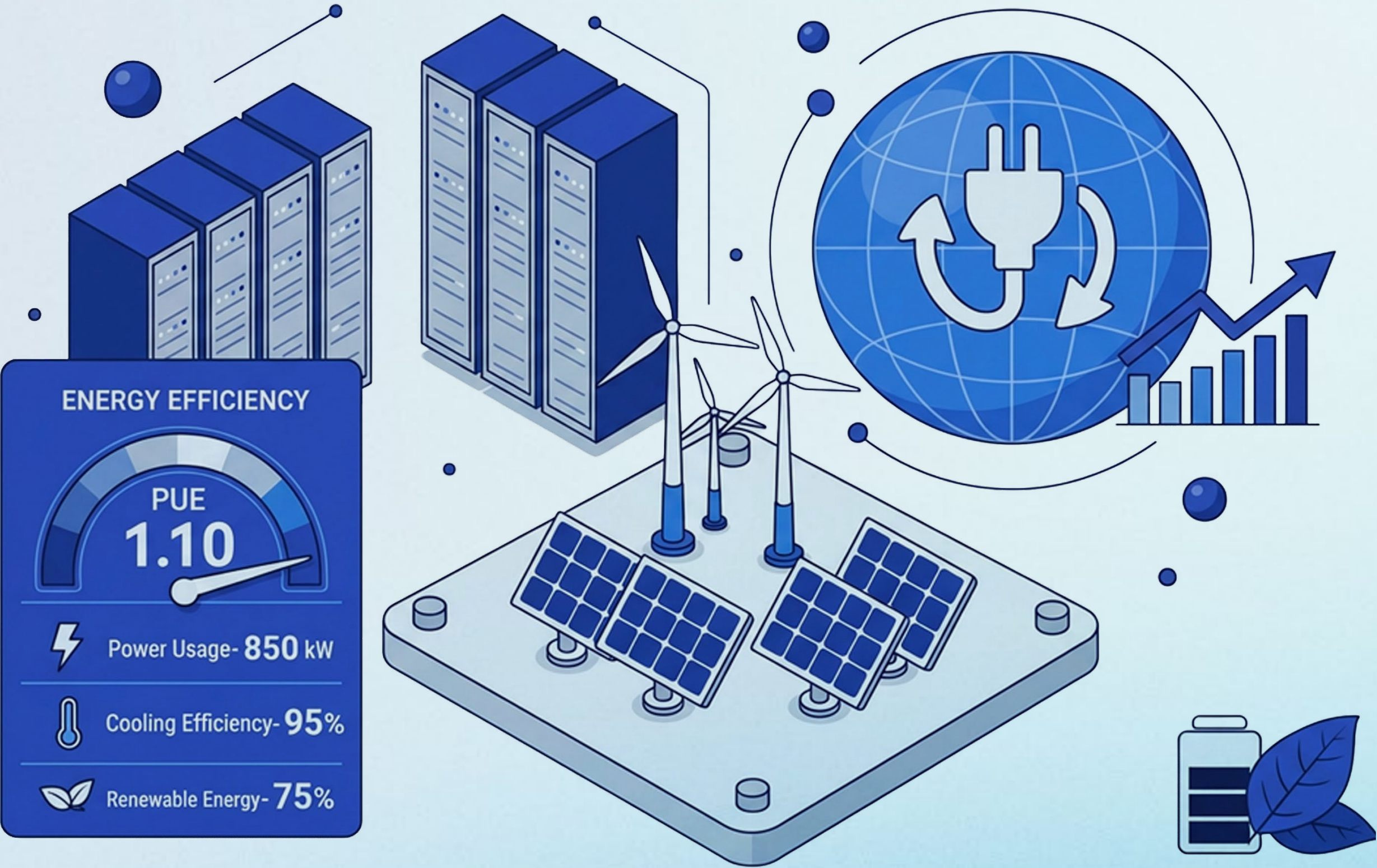
**OPTIMIZATION
& CONTINUOUS
IMPROVEMENT**

↗ Application

BUILDINGS

COMMUNITIES

DATA CENTER



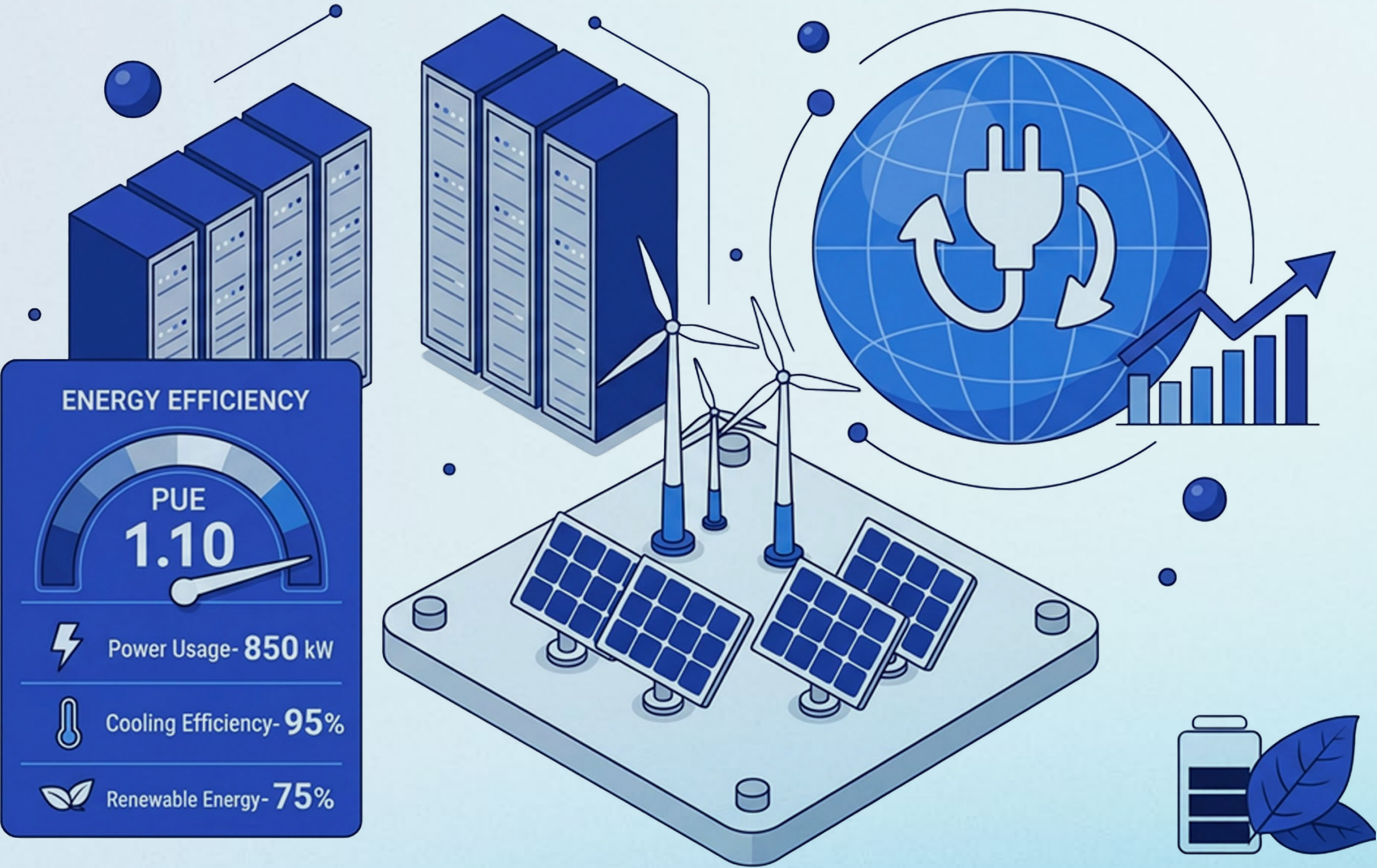
SECTOR OVERVIEW

RACS delivers advanced solutions to optimize data center performance, reliability, and energy efficiency. Our expertise includes Computational Fluid Dynamics (CFD) modeling for airflow and thermal analysis, ensuring optimal cooling strategies and preventing hotspots. In parallel, we provide Energy Efficiency Services tailored for data centers, focusing on reducing power consumption, improving PUE (Power Usage Effectiveness), and supporting sustainability goals without compromising operational resilience.

By combining engineering precision with digital innovation, we help data centers achieve superior performance, lower operating costs, and meet stringent environmental standards, critical in today's high-demand, energy-intensive digital landscape.

➤ Data Center

ENERGY EFFICIENCY



SECTOR OVERVIEW

Our Energy Efficiency Services for Data Centers are designed to enhance performance, reduce energy consumption, and improve the overall resilience of mission-critical operations. We conduct comprehensive assessments covering cooling systems, electrical distribution, airflow management, IT load efficiency, and control strategies to identify performance gaps and optimization opportunities.

Through data analysis, on-site surveys, and advanced simulation tools, we develop targeted solutions that minimize PUE, reduce operating costs, and extend equipment life while maintaining the highest standards of reliability and uptime.

Our team delivers actionable recommendations, detailed implementation plans, and end-to-end support—from feasibility studies and design upgrades to procurement, construction, and commissioning—ensuring that data centers operate efficiently, sustainably, and with maximum operational integrity.

↗ Key benefits



REDUCED OPERATING COSTS



IMPROVED POWER USAGE EFFECTIVENESS (PUE)



ENHANCED SYSTEM RELIABILITY AND UPTIME



EXTENDED EQUIPMENT LIFESPAN



INCREASED COOLING CAPACIT



INFORMED DECISION-MAKING



OPTIMIZED SPACE UTILIZATION



COMPLIANCE WITH INDUSTRY STANDARDS

↗ Approach

01

ENERGY AUDIT

02

DETAILED
DESIGN

03

CONSTRUCTION

04

TESTING AND
COMMISSIONING

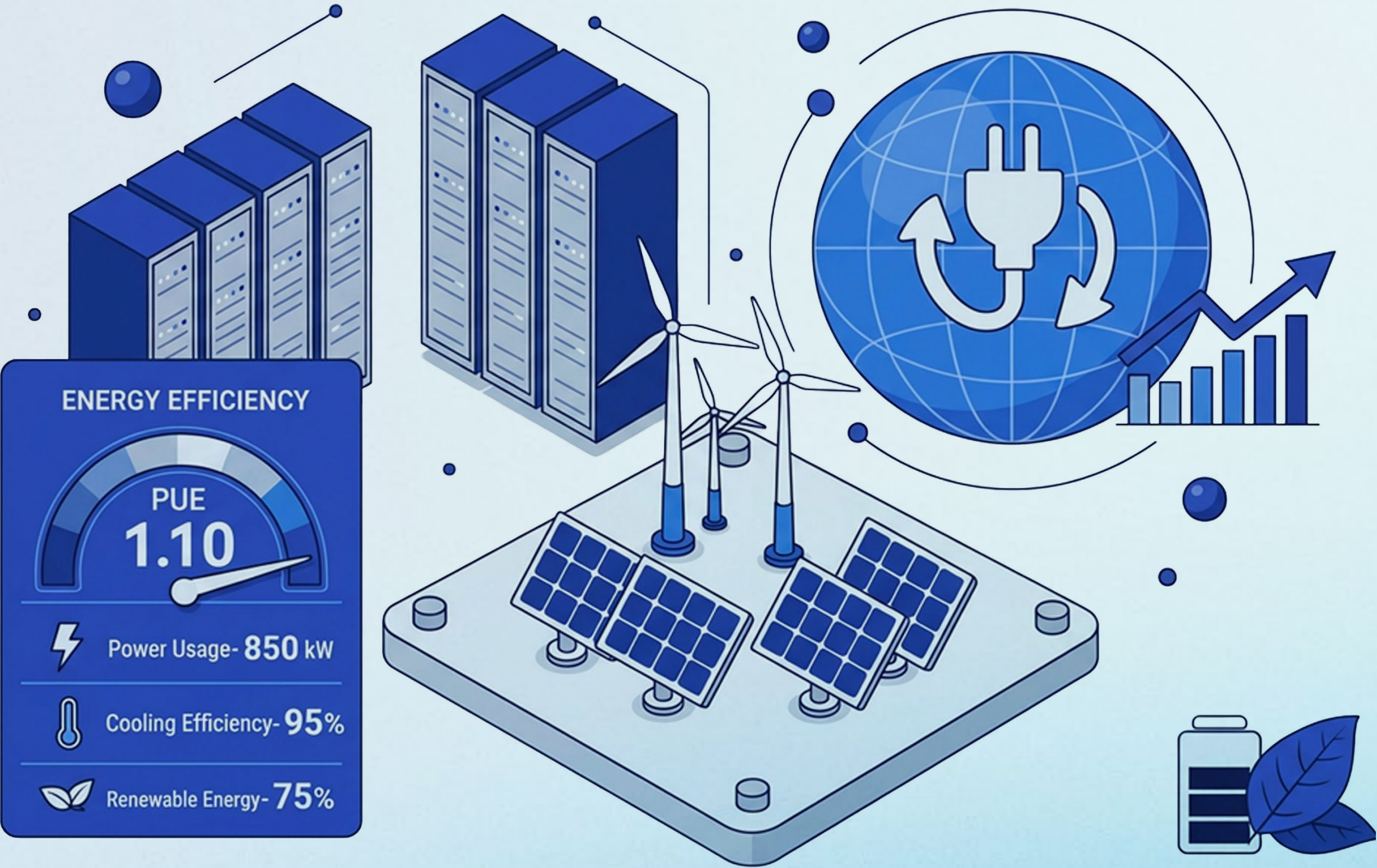
05

MEASUREMENT
AND VERIFICATION

06

ENERGY
MANAGEMENT

➤ Data Center
CFD



SECTOR OVERVIEW

Our CFD services for data centers provide advanced modeling and simulation of airflow, temperature distribution, and cooling efficiency to optimize thermal management and ensure reliable operation.

By analyzing cooling performance, hot and cold aisle behavior, and airflow patterns, we identify potential hotspots, inefficiencies, and areas for improvement before implementation. This data-driven approach enables precise planning of cooling layouts, equipment placement, and airflow management strategies, reducing energy consumption, preventing thermal risks, and enhancing overall operational reliability.

The insights from CFD simulations are delivered in detailed reports with actionable recommendations, allowing data center operators to make informed decisions on design, retrofits, and operational optimization.

Key benefits



OPTIMIZED COOLING PERFORMANCE



REDUCED ENERGY CONSUMPTION



ENHANCED EQUIPMENT RELIABILITY



DATA-DRIVEN DESIGN DECISIONS



RISK MITIGATION



COST SAVINGS ON RETROFITS AND UPGRADES



IMPROVED OPERATIONAL VISIBILITY

↗ Our Approach to CFD Services

01

PROJECT
UNDERSTANDING &
DATA COLLECTION

02

MODEL
DEVELOPMENT

03

SIMULATION SETUP

05

ANALYSIS &
OPTIMIZATION

06

VALIDATION &
REPORTING



TEAM CERTIFICATION

➤ Team Certifications

LEED AP BD+C BY GBCI

CERTIFIED HVAC DESIGNER (CHD) BY ASHRAE

CERTIFIED ENERGY MANAGER (CEM) BY AEE

HIGH-PERFORMANCE BUILDING DESIGN
PROFESSIONALS (HBDP) BY ASHRAE

CERTIFIED ENERGY AUDITOR (CEA) BY AEE

PROJECT MANAGEMENT PROFESSIONAL
(PMP) BY PMI

CERTIFIED WATER EFFICIENCY PROFESSIONAL
(CWEP) BY AEE

CERTIFIED MEASUREMENT & VERIFICATION
PROFESSIONAL (CMVP) BY AEE



PREVIOUS PROJECTS

AL MARIAH WATERFRONT

01

Project

Al Mariah Waterfront

Outdoor Area

8,000 m²

Project Description

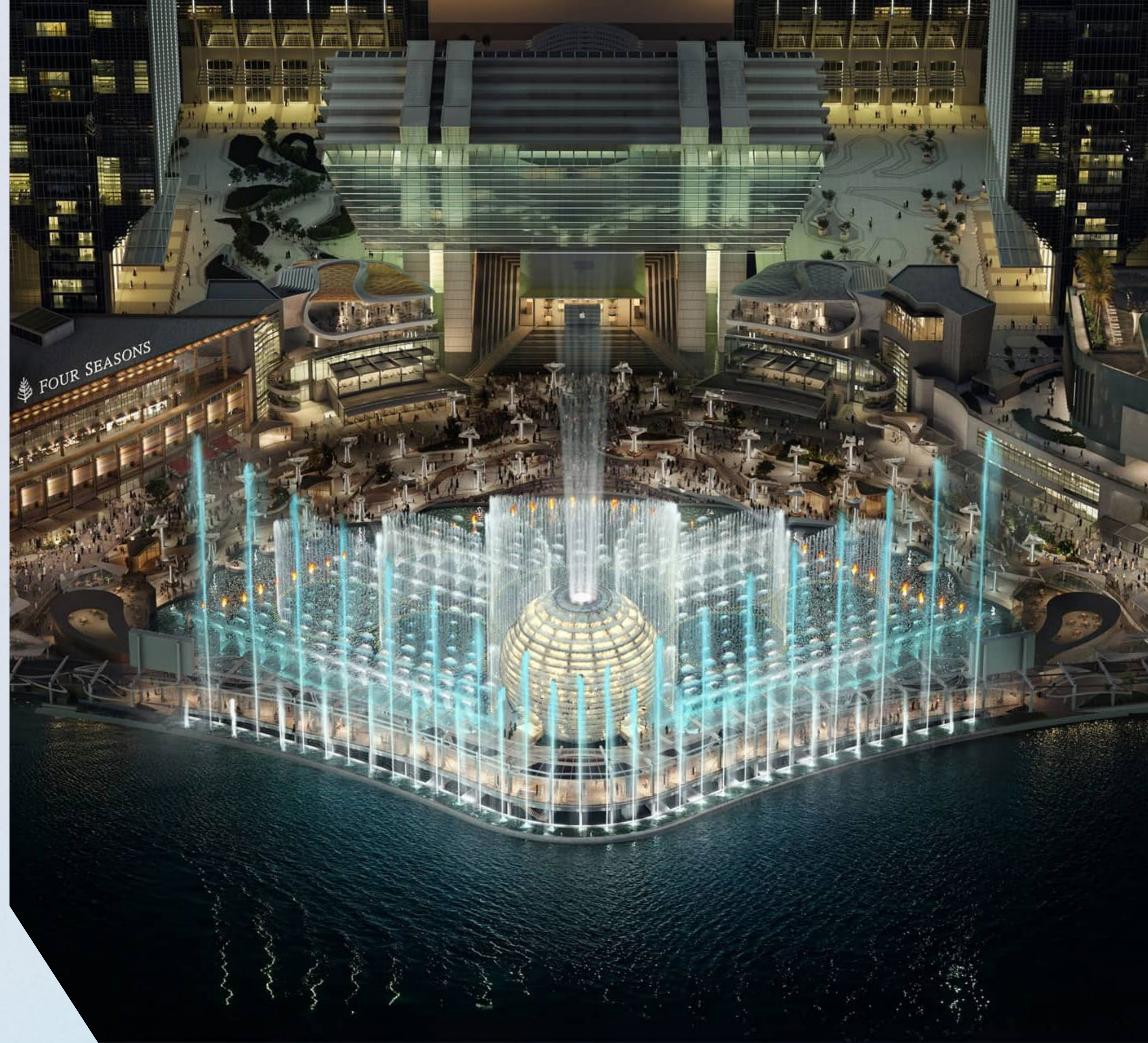
Outdoor Cooling System

Services

Design and Build

Location

Al Mariah Island- UAE, Abu Dhabi



NAMMOS RESTAURANT

02

Project

Nammos Restaurant

Outdoor Area

500 m²

Project Description

Outdoor Cooling

Services

Design and Build

Location

Jumeirah, Four Seasons Resort- UAE, Dubai



REEF 1000 BUILDING

03

Project

Reef 1000 Building

Outdoor Area

600 m²

Project Description

125 Outdoor Balconies

Services

Design and Build

Location

Dubai Land – UAE, Dubai



REEF 999 BUILDING

04

Project

Reef 999 Building

Outdoor Area

8,000 m²

Project Description

Outdoor Balconies & Winter Garden

Services

Design and Build

Location

Al-Farjan – UAE, Dubai



REEF 998 BUILDING

05

Project

Reef 998 Building

Outdoor Area

1,500 m²

Project Description

Outdoor Balconies &
Winter Garden

Services

Design and Build

Location

Dubai Land – UAE, Dubai



REEF VILLA

06

Project

Reef Villa

Outdoor Area

120 m²

Project Description

Outdoor Balconies &
Winter Garden

Services

Design and Build

Location

Jumeirah– UAE, Dubai



AL MAKTOUN STADIUM

07

Project

Al Maktoum Stadium

Outdoor Area

15,000 m²

Project Description

Outdoor Cooling

Services

Design and Build

Location

Oud Metha- UAE, Dubai



ZABEEL GRAND MOSQUE

08

Project

Zabeel Grand Mosque

Outdoor Area

6,900 m²

Project Description

Outdoor Cooling

Services

Design and Build

Location

Za'abeel- UAE, Dubai



VVIP PALACE

09

Project

VVIP Palace

Outdoor Area

80 m²

Project Description

Outdoor Seating Area

Services

Design and Build

Location

Doha, Qatar



OTHAIM PARK MALL

10

Project

Othaim Park Mall

Outdoor Area

80,000 m²

Project Description

Outdoor Cooling

Services

Design

Location

Dammam, Saudi Arabia



THE VILLAGE MALL



Project

The Village Mall

Outdoor Area

13,500 m²

Project Description

Outdoor Cooling

Services

Design and Build

Design

11,000 m²

Build

2,500 m²

Location

Dama St., Seeb - Oman, Muscat

AL HAZM MALL

12

Project

Al Hazm Mall

Outdoor Area

1,700 m²

Project Description

Upgrade of Outdoor
Cooling

Services

Build

Location

Doha, Qatar





WHY RACS

➤ Why Choose RACS

1. PIONEERS IN OUTDOOR COOLING

2. END-TO-END DELIVERY EXPERTISE

3. SPECIALIZED GCC EXPERIENCE

4. ADVANCED TECHNICAL KNOWLEDGE

5. EXCELLENCE ACROSS THE BUILDING LIFECYCLE

6. CUTTING-EDGE ENGINEERING TOOLS

7. MULTIDISCIPLINARY CERTIFIED TEAM

8. 100% CLIENT SATISFACTION

9. TRANSPARENT PRICING



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